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SANTA BARBARA
BULLETIN

GENERAL CATALOGUE

FALL AND SPRING 1964-1965

UNIVERSITY OF CALIFORNIA, SANTA BARBARA Bulletin

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Application for re-entry at Santa Barbara, California, is pending.

GENERAL CATALOGUE

Fall and Spring Semesters

1964-1965

UNIVERSITY OF CALIFORNIA
SANTA BARBARA

SANTA BARBARA, CALIFORNIA

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President Kerr with UCSB students

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Administrative and departmental offices are normally open Monday through Friday from 8 a.m. until noon and from 1 p.m. until 5 p.m., or by appointment. In addition, the Public Information Office is open on Saturday from 9 a.m. until 12 noon.

Telephone 968-1511 during regular office hours.

Calendar

1964 — Fall Semester, 1964–1965

June 1, Monday	Pre-enrollment begins for continuing students *only*. Fees may be paid and Preferred Program Cards filed for pre-enrollment in classes. By mail or in person.
July 10, Friday	Pre-enrollment begins for new and returning students. Fees may be paid and Preferred Program Cards filed for pre-enrollment in classes. By mail or in person.
*July 15, Wednesday	Final date for applications and credentials for admission to undergraduate status for the fall semester to be filed in the Admissions Office. Final date for intercampus transfer.
July 17, Friday	Continuing students who file Preferred Program Cards after this date will be pre-enrolled after new and returning students have been programmed.
July 24, Friday	Last day to apply for reinstatement for fall semester.
Aug. 3, Monday	Final date for applications and credentials for admission to graduate status for the fall semester to be filed with the Dean of the Graduate Division.
Aug. 26, Wednesday	Last day to make application for readmission to the fall semester; to be filed with the Registrar's Office by students not in attendance during the spring semester, 1964, or who withdrew during the spring semester, 1964. Special undergraduates and all students in limited status must apply for readmission every semester.
Sept. 10, Thursday	Last day to file Preferred Program Cards. Filing after this date will determine the order in which the student will be admitted to open registration on Friday, Sept. 18. If by mail, postmark must be no later than Sept. 7.
Sept. 14, Monday	Fall semester begins. 8:00 p.m. All-Student Assembly.
Sept. 14, Monday, through Sept. 18, Friday	Declaration of Residence, NH 1131.
	Orientation, counseling, testing, registration, and pre-enrollment in classes. For detailed daily activities see *Schedule of Classes and Directory,* available at the Bookstore (15¢, or 25¢ by mail).
Sept. 15, Tuesday	Last day to pay fees in order to hold place in classes reserved through pre-enrollment.
Sept. 18, Friday	Last day to pay fees without penalty. $10 late registration fee assessed after this date.
Sept. 21, Monday	Instruction begins.
Sept. 25, Friday	Last day to pay fees.
Sept. 28, Monday, through Oct. 2, Friday	Filing of registration packets.
Oct. 2, Friday	$10 fee assessed after this date for late filing of packets and an additional $3 fee assessed after this date for late filing of Announcement of Candidacy (IBM registration card No. 8). Last day to file Application for Candidacy to qualify for the master's degree or the doctor's degree. These forms obtained from and returned to the Graduate Division.

* March 1, 1965 deadline for intercampus transfer and application for fall semester, 1965.

Oct. 9, Friday	Last day for adding courses. Last day to file Announcement of Candidacy.
Oct. 14, Wednesday	Last day to file registration packets without lapse in status as a student in the University. Reinstatement fee is $10 plus $10 late filing fee after this date.
Oct. 16, Friday	Last day to drop courses (above 12 units) without permission of the dean of the school or college. After this date **withdrawals permitted only for cause and under exceptional circumstances.**
Oct. 24, Saturday	Last day to file application for engineering examination for admission spring semester, 1965.
Oct. 30, Friday	Last day to file completed applications for teaching credentials for January, 1965. These forms obtained from and filed with the Office of the Registrar.
Nov. 7, Saturday	Engineering examination for admission spring semester, 1965.
Nov. 14, Saturday	End of first half of semester.
Nov. 23, Monday	Pre-enrollment counseling begins.
Nov. 26, Thursday, through Nov. 27, Friday	Thanksgiving holiday, administrative.
Nov. 26, Thursday, through Nov. 28, Saturday	Fall recess. (Classes dismissed at 5:00 p.m. Wednesday, Nov. 25.)
Dec. 7, Monday	Final date to file with the committee in charge of master's theses and doctoral dissertations for degrees to be conferred January, 1965.
Dec. 21, Monday, through Jan. 2, Saturday	Christmas recess.
Dec. 24, Thursday, and Dec. 25, Friday	Christmas holiday, administrative.
Dec. 31, Thursday, and Jan. 1, Friday	New Year's holiday, administrative.
Jan. 4, Monday	Instruction resumes. Final date to file with Dean of Graduate Division completed copies of theses for master's degrees and dissertations for doctoral degrees to be conferred January, 1965.
Jan. 9, Saturday, through Jan. 17, Sunday	Dead Week. No student or faculty sponsored evening student group meetings or social events are to be scheduled for this week.
Jan. 16, Saturday	Instruction ends.
Jan. 18, Monday, through Jan. 27, Wednesday	Final examinations.
Jan. 27, Wednesday	Fall semester ends.

1964

Spring Semester, 1965

Nov. 23, Monday	Pre-enrollment counseling begins.
Dec. 1, Tuesday	Final date for applications and credentials for admission to graduate status for the spring semester to be filed with the Dean of the Graduate Division.
Dec. 4, Friday	Pre-enrollment begins for continuing students *only*. Fees may be paid and Preferred Program Cards filed for pre-enrollment in classes. By mail or in person.

Dec. 11, Friday	Pre-enrollment begins for new and returning students. Fees may be paid and Preferred Program Cards filed for pre-enrollment in classes. By mail or in person.
*Dec. 15, Tuesday	Final date for applications and credentials for admission to undergraduate status for the spring semester to be filed in the Admissions Office. Final date for intercampus transfer.
Dec. 28, Monday	Last day to apply for reinstatement for spring semester by students not currently in attendance.

1965

Jan. 15, Friday	Last day to make application for readmission to the spring semester; to be filed with the Registrar's Office by students not in attendance during the fall semester, 1964, or who withdrew during the fall semester, 1964. Special undergraduates and all students in limited status must apply for readmission every semester. Last day for continuing students to file applications for undergraduate scholarships for subsequent year.
Jan. 28, Thursday	Last day to file Preferred Program Cards. Filing after this date will determine the order in which the student will be admitted to open registration on Friday, Feb. 5. If by mail, postmark must be no later than Jan. 25.
Feb. 1, Monday	Spring semester begins.
Feb. 1, Monday, through Feb. 5, Friday	Orientation, counseling, testing, registration, and pre-enrollment in classes. For detailed daily activities, see *Schedule of Classes and Directory*, available at the Bookstore (15¢, or 25¢ by mail).
Feb. 2, Tuesday	Declaration of Residence, NH 1131. Last day to pay fees in order to hold places in class reserved through pre-enrollment.
Feb. 5, Friday	Last day to pay fees without penalty. $10 late registration fee assessed after this date. Last day to file applications for graduate fellowships and scholarships.
Feb. 8, Monday	Instruction begins.
Feb. 12, Friday	Last day to pay fees.
Feb. 15, Monday	Last day for new and returning students to file applications for undergraduate scholarships for subsequent year.
Feb. 15, Monday, through Feb. 19, Friday	Filing of registration packets.
Feb. 19, Friday	$10 fee assessed after this date for late filing of packets and an additional $3 fee assessed after this date for late filing of Announcement of Candidacy. Last day to file Application for Candidacy to qualify for the master's degree or the doctor's degree. These forms obtained from and returned to the Graduate Division.
Feb. 22, Monday	Washington's Birthday. Academic and administrative holiday.
Feb. 26, Friday	Last day for adding courses. Last day to file Announcement of Candidacy.
Mar. 3, Wednesday	Last day to file registration packets without lapse in status as a student in the University. Reinstatement fee is $10 plus $10 late filing fee after this date.

* October 15, 1965 deadline for intercampus transfer and application for spring semester, 1966.

Mar. 5, Friday	Last day to drop courses (above 12 units) without permission of the dean of the school or college. After this date **withdrawals permitted only for cause and under exceptional circumstances.**
Mar. 19, Friday	Last day to file completed applications for teaching credentials for June, 1965. These forms obtained from and filed with the Office of the Registrar.
Mar. 20, Saturday	Last day to file application for engineering examination for admission fall semester, 1965.
Mar. 29, Monday	Final date to file with the committee in charge of master's theses and doctoral dissertations for degrees to be conferred June, 1965.
Apr. 3, Saturday	Engineering examination for admission fall semester, 1965.
Apr. 10, Saturday	End of first half of semester.
Apr. 12, Monday, through Apr. 17, Saturday	Spring recess.
Apr. 16, Friday	Administrative holiday.
May 14, Friday	Final date to file with Dean of Graduate Division completed copies of theses for master's degrees and dissertations for doctoral degrees to be conferred June, 1965.
May 19, Wednesday	Pre-enrollment counseling begins.
May 24, Monday through May 30, Sunday	Dead Week. No student or faculty sponsored evening student group meetings or social events are to be scheduled for this week.
May 29, Saturday	Instruction ends.
May 31, Monday	Memorial Day holiday. Academic and administrative holiday.
June 1, Tuesday, through June 10, Thursday	Final examinations.
June 10, Thursday	Spring semester ends.

1965 Summer Session

Mar. 1, Monday, through June 16, Wednesday	Pre-enrollment.
June 21, Monday	Instruction begins.
July 5, Monday	Independence Day holiday. Academic and administrative holiday.
July 30, Friday	Instruction ends.

The University of California

ABOUT THE UNIVERSITY

Established on March 23, 1868, as a Land-Grant institution and State university, the University of California in less than a century has grown into a statewide institution comprising nine campuses, six major research stations, nine agricultural field stations, fifty-three agricultural extension offices, and a number of other components located throughout the State. The University itself is part of a coordinated system for public higher education that embraces the State's more than seventy junior colleges and eighteen state colleges.

The University performs many services in addition to its regular program of instruction. It is the primary state-supported academic agency for research. It provides many public services including medical and dental clinics, informational services for agriculture, a program of adult education, summer session, public lectures, educational motion pictures, and a broad program of business and professional conferences and institutes.

THE UNIVERSITY ADMINISTRATION

The organization and government of the University of California is entrusted, under the State Constitution, to a corporate body titled The Regents of the University of California. The Board of Regents is composed of twenty-four members, sixteen appointed by the Governor of the State for sixteen-year terms and eight who are members because of offices they hold. These *ex officio* members are the Governor, the Lieutenant-Governor, the Speaker of the Assembly, the President of the State Board of Agriculture, the President of the Mechanics' Institute, the President of the Alumni Association, the State Superintendent of Public Instruction, and the President of the University. The Regents have "full powers of organization and government, subject only to such Legislative control as may be necessary to insure compliance with the terms of the endowments of the University and the security of its funds."

The President of the University is the executive head of the University in all its departments and on all its campuses. He is appointed by The Regents and is directly responsible to them. The President and his staff, with headquarters in University Hall at Berkeley, direct the development of major University-wide policy.

The Chancellor is the chief administrative officer on the campus and administers the organization and operation of the campus.

To participate in the administration of academic matters, The Regents have established an Academic Senate, consisting of the faculty and certain of the administrative officers. The Senate, subject to the approval of The Regents, determines conditions for admission of students, and for granting certificates and degrees. It authorizes and supervises all courses of instruction in the academic and professional schools and colleges and exercises general supervision of the discipline of students.

Graduate Divisions, each administered by a Graduate Dean responsible to the Chancellor are established on the Berkeley (including Mt. Hamilton), Davis, Los Angeles, Riverside, San Diego, San Francisco, and Santa Barbara campuses. These Graduate Divisions have curricula leading to the degrees Master of Arts, Master of Science, Doctor of Philosophy, and such other graduate degrees as from time to time may be approved.

Campbell Hall

Santa Barbara Campus

ITS DEVELOPMENT

The University of California, Santa Barbara, has undergone an extensive evolution to its present status as a campus of the Statewide University.

In 1891, this institution began as the Anna S. C. Blake Training School, a private school located in the West Building at State and Haley Streets. Eight years later, it was taken over by the city of Santa Barbara and became Santa Barbara Manual Training Normal School. In 1906 a teacher training program was added. Governor James M. Gillette signed a bill on April 26, 1909, establishing the Santa Barbara State Normal School of Manual Arts and Home Economics; thus, the school became the first institution in the United States to be devoted exclusively to teacher training in manual arts and home economics. During the first twenty years of its existence, the school was devoted wholly to the training of women. In 1911, however, the first male student was enrolled. In 1919 the curriculum was broadened to include the education of elementary teachers, and the name was changed to Santa Barbara State Normal School. This designation lasted for only two years, and in 1921 it was renamed the Santa Barbara State Teachers College. It became the first California state college to be admitted to the American Association of Teachers Colleges. In 1922 the teachers' colleges began gradual development of a four-year general education program. Santa Barbara began awarding the Bachelor of Arts degree in 1927 and soon thereafter the entire graduating class received this baccalaureate degree. As the broadening of the curricula into several fields progressed, the institution became Santa Barbara State College in 1935. By this time the character of the program changed markedly and forty-three per cent of the graduates were in nonteaching fields. In 1941 there were 412 graduates, the second largest class among the California state colleges.

In the history of the campus development, the College in 1913 moved from a single downtown building to a fourteen-acre campus on the Riviera. Further expansion was anticipated in 1932 when the Mesa campus was purchased and one building for the Industrial Arts Department was constructed. With the availability of the present campus location near Goleta, plans were then changed to move all departments to the new site. Classes opened on the new campus in the fall of 1954.

Santa Barbara State College became a campus of the University of California in 1944, and was known as Santa Barbara College. It was made a general campus of the University in 1958. The University of California, Santa Barbara, has regional accreditation from the Western College Association.

THE CAMPUS

The University's Santa Barbara campus is situated on a scenic seashore near the community of Goleta, ten miles up the coast from the city of Santa Barbara. On its promontory of 600 acres, the campus views the majestic Santa Ynez Mountains on one side and the Pacific on the other, stretching out to and beyond the distant Channel Islands.

Sixteen permanent buildings have been erected on the coastal site—Arts, Biological Sciences, Campbell Hall, Central Laboratory for Radioactive Materials, De la Guerra Commons, Library, Music, North Hall, Ortega Commons, Physical Sciences, Robertson Gymnasium, South Hall, and the following residence halls: Anacapa (for 400 men), San Miguel (for 400 men), Santa Cruz (for 400 women), and Santa Rosa (for 400 women). During the 1964–1965 year, residence halls on the campus can accommodate 2,020 of the more than 7,200 students expected to enroll. Other new buildings are in the construction and planning stage.

The campus site was formerly a World War II Marine Air Base, and the military-type buildings have been attractively converted for university use until they are replaced by new structures.

The ample recreational facilities on the campus include tennis courts, swimming pool, campus beaches, playfields, track, baseball diamond, gymnasium, and a small golf course.

THE COLLEGE OF LETTERS AND SCIENCE

In July of 1961, the College of Letters and Science was established at the University of California, Santa Barbara. At the present time it is the only college on the campus. All freshmen coming to the Santa Barbara campus enroll in the College of Letters and Science and all students are subject to the general requirements of the University, the general education requirements of the College of Letters and Science, and major departmental requirements (such as English, History or the School of Engineering).

SCHOOL OF EDUCATION

The School of Education is designed to provide preparation for students interested in one or more of the following fields of educational service: (1) teaching in elementary schools, secondary schools, junior colleges, and adult education programs; (2) counseling or supervisory positions in the public schools; (3) teaching in college or university departments of education; (4) research activities in the field of education—either in public school systems or in institutions of higher learning.

Credential Programs

Any student who expects eventually to obtain a teaching credential should consult with advisers in the office of the Department of Education as early as possible in his college career. More detailed information regarding education programs may be obtained by writing to the Dean, School of Education.

SCHOOL OF ENGINEERING

In January 1961 The Regents of the University of California authorized the establishment of the School of Engineering at the University of California, Santa Barbara. Students have been enrolled for several years in the School and several programs are now being offered.

In 1964–1965 offerings by the School will include Electrical and Mechanical Engineering at all undergraduate levels. Chemical Engineering will be presented through the sophomore year. It is anticipated that graduate work will be presented soon in Electrical, Mechanical, and other branches of Engineering.

GRADUATE DIVISION

The University of California, Santa Barbara, offers advanced programs of study leading to the degrees of Master of Arts in most fields, including education and Doctor of Philosophy in biology, chemistry, economics, English, history, mathematics, philosophy, physics, political science, and psychology. Also offered is advanced study leading to certificates of completion for various teaching credentials. For further information see pp. 57, the *Graduate Division Announcement,* and the *Announcement of the School of Education.*

EDUCATION ABROAD PROGRAM

The Education Abroad Program offers opportunities to undergraduate students of the University of California to study in universities overseas. It is administered for the entire University by the Santa Barbara campus and serves also as a focal point of information on all types of educational exchange experiences. A bulletin entitled *University of California Abroad* is published monthly during the school year and is distributed to all of the campuses of the University.

In 1964–1965 the Education Abroad Program will operate four European study centers in cooperation with the University of Bordeaux, Georg August University, Göttingen, the University of Madrid, and the University of Padua. A fifth study center has been established in Mitaka-Tokyo in cooperation with International Christian University. These centers range in size from twenty to one hundred students.

Eligibility requirements are: junior standing in the University, two years of university-level work in the language of the country with a B average (or the equivalent thereof), an overall B average, seriousness of purpose, and an indication of ability to adapt to a new environment. Transfer students are eligible if they meet the language requirement and have completed at least one language course in the University of California. (The language requirement is not applicable to the center in Japan.)

The participants will spend from nine to eleven months abroad, including a special orientation program, six or seven weeks of intensive language preparation, a full academic year in the university of their choice, and some vacation travel.

All will be concurrently enrolled as students at the University of California, Santa Barbara and in the host university and will receive full academic credit for courses satisfactorily completed. See Education Abroad Program in this bulletin for a partial listing of the courses available.

The Regents endeavor to bring this year abroad within the reach of all students, regardless of their financial resources.

Applications for 1965–1966 will be accepted on or after February 1, 1965.

REGULAR AND SUMMER SESSIONS

The academic calendar year of the University of California, Santa Barbara, is divided into two equal semesters, the fall semester beginning in September and the spring semester ending in June. In addition, there is a summer session of six weeks. The summer session curriculum includes courses in most departments. As an integral part of the teacher education program, there is an Elementary Demonstration School. Annually a college orientation program of regular session courses is offered in summer session to a selected group of high school students who have completed the junior year.

THE UNIVERSITY LIBRARY

The University Library is a general collection of 275,000 volumes in an open-stack arrangement serving all undergraduate and graduate programs. Approximately 4500 periodicals and other serial publications are currently received. The phonograph record collection includes some 6400 discs in music, foreign languages, and speech and drama. Two informational pamphlet collections supplement the book collections. The Library also receives 31 newspapers.

A varied collection of microfilms, microcards and microprints make available for study many materials no longer obtainable in book form.

Significant purchases of private libraries and gift collections of books and periodicals are expanding the research collection. These specialized materials predicted to double the general collection during this decade will be housed in an eight-story addition

adjacent to the present building, planned for completion in 1967. In this "University stack" addition will also be located graduate seminar rooms, faculty study cubicles, several open reading areas and graduate study carrels to serve a university student body of more than 10,000.

Two branch libraries are also planned for the late 'sixties, one to house the sciences and engineering collections, the other to be devoted to art, music, speech and drama.

The Library is an authorized depository for U. S. Federal publications issued by the Superintendent of Documents and for all California State publications. The federal documents collection was begun in 1935 by the Santa Barbara Public Library which transferred its holdings to the University two decades later. The collection of State publications is more recent in origin but is approximately complete for five years. In addition the Library receives all printed United Nations Publications and selected foreign documents.

The Reserved Book Room-Reading Room area is located in an enclosed area inside the west entrance. This section is open for study on certain holidays and vacation periods and during final examination week for longer hours than the general library. A schedule of hours is posted at the entrance.

The Reserved Book Room also houses the curriculum materials. The Library is one of eighteen depositories for curriculum materials issued by all California counties and major school districts.

The Department of Special Collections on the second floor houses the endowed Wyles Collection of Lincolniana, Civil War and Western expansion materials, consisting of approximately 14,500 books, pamphlets, maps, pictures, and manuscripts. In addition, the department includes the Skofield Printers Collection of materials about printing and samples of fine printing and private presses. Also there are collections of first and rare editions of Henry James, Aldous Huxley, Samuel Beckett, Robert Frost, and other American and English writers. Recent gifts and special purchases have enlarged the collection of incunabula and manuscripts.

Special library features include listening rooms, reading facilities for micro-text, photocopy equipment, a typing room, group study rooms, a graduate reading room, and a sundeck for conversation.

A copy of the student handbook "Your Library" is available to every student. Individual help in use of the card catalog and in locating materials in the Library or in circulation is readily given by staff members.

Library hours will be posted for each semester.

ARTS AND LECTURES PROGRAM

Under the sponsorship of the Committee on Arts and Lectures, the University annually presents cultural programs designed to extend curricular offerings. These events, which are open to the public, include lectures on a wide variety of subjects by men and women of eminence and authority in their fields. Drama, music, film and dance productions, as well as art exhibits, are featured using either professional or student talent. Many of these presentations are co-sponsored by the Associated Students.

In past years, such events have included series of lectures by Christopher Isherwood, Margaret Mead, Ashley Montagu, Paul Tillich and H. D. F. Kitto, as Visiting Professors or Regents' Professors and Lecturers. Single lectures covering a wide variety of subjects also are presented each semester by UCSB faculty members and distinguished guests, including such well-known names as Harold Urey, Edward Teller, C. P. Snow, John Crowe Ransom, Upton Sinclair, Hans Morgenthau, Robert M. Hutchins and Alfred Kazin.

Eminent performers in the musical arts who have visited the campus in recent

seasons include mezzo-soprano Jennie Tourel and violinists Isaac Stern and Ruggiero Ricci on the All-University concert series; the Menuhin-Ryce piano duo, and dance artist Jose Limon. In addition, the campus and community are privileged to hear a number of concerts each year by the distinguished Paganini Quartet-in-residence at UCSB. Frequent performances by campus musical groups, including the University Symphony Orchestra, the Opera Workshop, the Modern Chorale, Men's and Women's Glee Clubs, Musica Antiqua, and others, are also part of the musical series.

Dramatic productions by the San Francisco Actor's Workshop, the Treteau de Paris Company from France and the Cleveland Playhouse have highlighted professional dramatic productions, while the Department of Speech and Drama has offered such diverse fare as "Othello," Ionesco's "Rhinoceros" and Sophocles' "Oedipus the King." A student production of "Where's Charley?", after premiering on the campus, toured the Orient under the auspices of the USO. A new student theatre, seating 400, will be opened in the spring of 1965 with an additional series of distinguished productions.

A weekly film series, presenting a collection of foreign and American films, which have contributed most to film-making as an art, is shown free of charge to students and for token admission to the general public. Past series have included works by such imaginative and provocative directors as Ingmar Bergman, Fellini, Godard, Truffaut and Ray.

The University Art Gallery offers a series of outstanding exhibitions throughout the year, opening with the annual faculty display in the fall. This is followed by such exhibits as drawings and paintings by Saul Steinberg and Paul Klee, a collection of Greek art from private collections in Southern California, and others. The Gallery's large permanent collection includes the Sigmund Morgenroth group of Renaissance and Baroque medals and plaques, the Sedgwick collection of 15th to 17th century paintings and 25 prints by Scotch artist James McBey. Selections from the Sedgwick collections are permanently on display, while a representative group of the remaining permanent collection is exhibited from time to time. Gallery hours are 10 a.m. to 4 p.m., Mondays through Fridays, and 1 to 5 p.m. Sundays.

COOPERATING INSTITUTIONS

By special arrangements the Santa Barbara Museum of Art and the Santa Barbara Museum of Natural History, both with large private endowments and excellent reputations and facilities, and the University of California, Santa Barbara, work together in the fields represented by these institutions. A number of university classes have been carried on during the past few years at the Museum of Natural History, and important programs and classes at the Museum of Art have been arranged for the students of the University. Similarly, the facilities of the Santa Barbara Botanic Garden are available to classes and advanced students in botany. A research laboratory has been established at the Garden specifically for independent investigation by students and faculty.

Hillside House, a privately endowed home and school for cerebral palsied children, serves as an observation laboratory for students in psychology and speech. St. Vincent School, a private Catholic institution, Lawrence Parma School, Santa Barbara and Ventura City Schools, Santa Barbara County Schools, and Devereux Ranch School meet a similar need for those interested in problems of the handicapped.

The major research laboratories of the University are Lick Observatory at Mt. Hamilton; the Ernest O. Lawrence Radiation Laboratory at Berkeley and Livermore; the Los Alamos Scientific Laboratory at Los Alamos, New Mexico; the White Mountain Research Station in Mono County; and the Richmond Field Station. Additionally, the California Agricultural Experiment Station conducts research at four campuses and at a number of field stations located throughout the State.

UNIVERSITY EXTENSION

University Extension makes available the resources of the University on a statewide basis to individuals and organizations. Extension programs are organized around the following educational aims:

1. The intellectual and cultural development of adults.
2. The dissemination of new knowledge resulting from teaching and research activities within the University.
3. The continuing education of scientific, technical, and professional personnel.
4. The development of special educational programs for public and private organizations and agencies.
5. Public affairs education through programs designed to aid adults in meeting their responsibilities as citizens.

A variety of methods are used to implement these aims: classes, discussion groups, correspondence courses, conferences, institutes, short courses, lectures, motion picture production, broadcast educational television, and vocational counseling and testing (Los Angeles only).

Veterans may use the educational benefits available to them under Federal and State laws to enroll in University Extension classes, provided the classes are part of their prescribed and recognized objectives approved by the Veterans Administration.

For detailed information, write or telephone the University Extension office on any campus of the University or at the following additional locations: 813 South Hill Street, Los Angeles 90014 (MAdison 3-6123); 1221 Fourth Avenue, San Diego 92101 (BElmont 2-7321); Room 15, Buena Park High School, 10th and Magnolia, Buena Park 90620 (LAmbert 6-3397); San Francisco Extension Center, 55 Laguna Street, San Francisco 94102 (UNderhill 1-6833); 3620 B West 182nd Street, Torrance 90500 (DAvis 3-4773).

Admission to the University

ADMISSION IN UNDERGRADUATE STATUS

The admission requirements of the University are based on two principles: first, that the best assurance of success in the University is shown by high quality of scholarship in previous work and, second, that the study of certain specified subjects will give the student both good preparation for the work of the University and reasonable freedom in choosing his field of specialization.

Application for Admission

Applications should be filed with the Office of Admissions, Administration Building, University of California, Santa Barbara, California 93106. An application form will be supplied by the Office of Admissions upon request. The application must be filed between October 1 and March 1 for the fall semester and between March 1 and October 15 for the spring semester.* Applicants are urged to file early in the application period.

Admission requirements are uniform on all campuses of the University. Admission to the University entitles the student to attend the campus of his choice if the required facilities are available there. Since applications will be processed and acted upon in only one Office of Admissions, applications directed to more than one campus should not be filed.

If, after a student has filed his application, he decides to register on a different campus, he should write to the Director of Admissions, 570 University Hall, University of California, Berkeley, California 94720, indicating the campus where he filed his application, the campus where he now wishes to register, and the reason for his change. His records will be transferred to the campus he wishes to attend provided facilities are available there. Such request must be received at least three weeks before registration.

Application Fee

Each applicant for admission is required to pay a non-refundable fee of $5 when an application is filed. Remittance by bank draft or money order payable to The Regents of the University of California should be attached to the application.

Transcripts of Record

Each applicant is responsible for requesting the graduating high school and each college attended to send official transcripts of record directly to the Office of Admissions. Transcripts from the last college attended should include a statement of good standing or honorable dismissal. A preliminary transcript should show work in progress.

Notification of Eligibilty

So that students may be informed as early as possible about eligibility, they are urged to apply early in the application period and request promptly to have transcripts of record sent to the Office of Admissions.

The time between receipt of an application by the Office of Admissions and notification to the applicant about his eligibility will vary. Students applying as first-semester freshmen should ask the high school to submit preliminary transcripts showing the complete record through the next-to-last semester before graduation and listing courses in progress during the final semester.

* The deadline for filing applications for admission to the spring semester 1965 is December 15.

Students may expect notification about four weeks after final transcripts have been received by the Office of Admissions. Those who apply early may receive notification somewhat more promptly. Since the receipt of preliminary transcripts may shorten this interval, applicants should arrange for the submission of preliminary transcripts showing work in progress.

Failure to Register

An applicant who is not eligible for admission or one who has been admitted but does not register in the semester for which he applied, and who thereafter desires to attend the University, must submit a new application for admission with a $5 fee. The new application will be acted upon in the light of current availability of facilities and current admission requirements.

Subject A: English Composition*

The University requires every accepted student to pass an examination in English composition (the Subject A examination) or to complete in college an acceptable course of at least 3 units in English composition with a satisfactory grade. Students who enter the University with credentials showing the completion elsewhere of acceptable college-level training in composition or a score of at least 600 in the College Entrance Examination Board Achievement Test in English Composition (see page 21 for dates) taken after completion of the eleventh grade are considered to have met the Subject A requirement. All other students are required to take the examination given by the University. Although it is not a condition of admission, it must be taken at the opening of the semester of first attendance if not taken previously. Students who neither pass the examination nor meet the requirement in one of the above ways will be required to take the non-credit course in English composition, for which a fee of $35 is charged.

Vaccination Certificate

Every new student and every student returning to the University after an absence of one or more semesters must present at the time of medical examination by the University Medical Examiners a certificate establishing the fact that he has been successfully vaccinated against smallpox within the last three years. A form for this purpose is sent routinely to all new students. Vaccination should be completed before registration.

Intercampus Transfer

An undergraduate student who is registered on any campus of the University, or who was previously registered in a regular session of the University and has not since been registered in another institution may apply for transfer to another campus of the University by filing the proper forms *on the campus where he was last registered.* The inter-campus transfer application forms and application for transcript of record forms may be obtained from the Office of the Registrar and must be filed with that office by March 1 for the fall semester and by October 15 for the spring semester.**

Preparation for University Curricula

In addition to the high school subjects required for admission to the University, certain preparatory subjects are recommended for many University curricula to give the student an adequate background for his chosen field of study. Lack of recommended high school course may delay graduation from the University. Details of

* See also, page 40.

** The deadline for filing applications for admission to the spring semester 1965 is December 15.

these recommendations will be found in the bulletin, *Prerequisites and Recommended Subjects,* which is ordinarily in the hands of high school and junior college counselors and which may be obtained from the Office of Admissions or the University Dean of Educational Relations, 570 University Hall, University of California, Berkeley, California 94720.

All students should pursue a full program of academic subjects during their senior year in high school.

Applicants not eligible for admission to the University are usually advised to attend one of the California junior colleges and take courses applicable toward the requirements of the college or school of the University in which they wish to enroll.

ADMISSION TO FRESHMAN STANDING

An applicant for admission to freshman standing is one who has not registered in regular session in any college-level institution since graduation from high school.

If the applicant does not meet at the time of high school graduation the requirements given below for admission to freshman standing, he must qualify for admission to advanced standing (see page 21). An exception to this regulation will be made only if the student's deficiency was the result of his having omitted one or more required high school subjects. Such a student can sometimes remove the deficiency during the summer; he should consult in advance the Office of Admissions.

If the applicant has registered in a junior college, a four-year college, a university, extension classes of college level, or any comparable institution since graduating from high school, he is subject to regulations governing admissions in advanced standing.

Requirements for Admission to Freshman Standing

Applicants for admission to freshman standing must meet the requirements listed below. These requirements apply to California residents; for special requirements for out-of-state applicants, see page 22.

Graduation from High School

Public and Private High Schools in California with College Preparatory Programs Accredited by the University of California is published by the University annually in September. Students who graduate from high schools listed therein may be admitted to the University upon the completion of prescribed courses with the required scholarship average.

Applicants who graduate from a California school not appearing in the above list will, upon request to the Office of Admissions, be instructed as to the procedure to follow. When residents of California have attended high schools outside California, the University determines the acceptability of the high school record.

Subject Requirements

a. History, 1 unit.

This must consist of 1 unit of United States history, or ½ unit of United States history and ½ unit of civics or American government.

b. English, 3 units.

These must consist of six semesters of English composition, literature, and oral expression, certified by the high school principal as University preparatory.

c. Mathematics, 2 units.

These must consist of two semesters of algebra and two semesters of plane geometry

or an integrated two-year course covering the same material. Advanced algebra and trigonometry may be substituted for algebra, and trigonometry and solid geometry for plane geometry.

d. Laboratory Science, 1 unit.

This must consist of an eleventh- or twelfth-grade year course in one laboratory science certified by the high school principal as University preparatory. Both semesters must be in the same subject field.

e. Foreign Language, 2 units.

These must be in one language. Any foreign language with a written literature is acceptable.

f. Advanced Course, 1 (or 2) units.

This must be chosen from one of the following:

Mathematics, a total of 1 unit composed of second-year algebra, solid geometry, trigonometry, or an advanced course for which trigonometry is a prerequisite.

Foreign language, either 1 additional unit in the same foreign language offered under *e* or 2 units of another foreign language.

Science, 1 unit of either chemistry or physics in addition to the science offered under *d*.

Electives

Additional elective units to complete the minimum of 15 standard entrance units are also required.

Scholarship Requirements

At least a B average is required in courses taken after the ninth year used to meet the subject requirements. Grades received in electives or in courses taken in the ninth year or earlier are not used in computing this average. Subject requirements are satisfied by courses in which a grade of C or higher has been assigned. Grades are considered on a semester basis except from schools that give only year grades.

In determining the B average, a grade of A in one course will be used to balance a C in another, but an A grade may not be used to compensate for D, E, or F grades.

Courses taken in the ninth year or earlier in which a grade of D or lower is received may be repeated to establish subject credit.

Courses taken after the ninth year in which a grade of C or lower is received may be repeated to establish subject credit or to improve scholarship. Grades earned in the first repetition may be used to satisfy scholarship; grades of C or higher in additional repetitions will satisfy the subject requirement but will not be counted higher than a C in scholarship computation.

Courses may be repeated in an amount not to exceed 2 units of the *a* to *f* pattern.

Minor Deficiencies

The Admission Officer has authority and responsibility for waiving minor deficiencies when justified by unusual academic records or recommendations.

Admission by Examination

Applicants who are ineligible for admission to freshman standing and who have not attempted college work subsequent to high school (except during the summer session between high school graduation and registration in the University) may qualify for admission by examination.

The University does not offer entrance examinations but accepts the results of examinations given by the Educational Testing Service for the College Entrance Examination Board.

To qualify by examination, the applicant must present scores in the Scholastic Aptitude Test and three Achievement Tests. The three Achievement Tests are to include English composition and one from each of the following two groups:

1. Social Studies and Foreign Languages.
2. Mathematics and Sciences.

The tests must be taken after completion of the first half of the eleventh grade. The first repetition of a test will be accepted, but the verbal and mathematics scores on the Scholastic Aptitude Test must be from the same sitting. The total score on the Scholastic Aptitude Test must be at least 1000; the scores on the three Achievement Tests must total at least 1650, and the score on any one Achievement Test must not be less than 500.

An applicant who has graduated from an unaccredited high school may qualify by examination under the foregoing rules.

For admission of out-of-state applicants by examination, see page 23.

Arrangements to take the tests should be made with the Educational Testing Service, P. O. Box 1025, Berkeley, California 94701, or P. O. Box 592, Princeton, New Jersey 08540. The fees are to be paid to the Educational Testing Service. Scores will be regarded as official only if they are received by the Office of Admissions directly from the Educational Testing Service.

Test Dates	*Application Deadlines*
Saturday, November 7, 1964 (S.A.T. California only)	October 10, 1964
Saturday, December 5, 1964	November 7, 1964
Saturday, January 9, 1965	December 12, 1964
Saturday, March 6, 1965	February 6, 1965
Saturday, May 1, 1965	April 3, 1965
Wednesday, July 14, 1965	June 16, 1965

Applicants should arrange to take the tests as early as possible. *The scores of an applicant who takes the tests in July may be reported too late for consideration for admission in the fall; similarly, the scores of an applicant who takes the tests in January will be reported too late for consideration for admission in the spring.*

ADMISSION TO ADVANCED STANDING

An applicant who has registered in a junior college, a four-year college, a university, extension classes of college level, or any comparable institution since graduation from high school is subject to regulations governing admission to advanced standing. The applicant may not disregard his college record and apply for admission to freshman standing.

Requirements for Admission to Advanced Standing

Applicants for admission to advanced standing must meet the requirements listed below. These requirements apply to California residents; for special requirements for out-of-state applicants, see page 22.

The requirements for admission to advanced standing vary in accordance with the high school record of the applicant. All applicants, however, must present from the last accredited college or university attended (a) a statement of good standing, and (b) an academic record with a grade-point average* of C or better.

* The grade-point average is determined by dividing the total number of acceptable units attempted into the number of grade points earned on those units. Courses completed with a grade lower than C may be repeated, but the units and grade points count each time the course is taken. Scholarship standard is expressed by a system of grade points and grade-point averages in courses acceptable for advanced standing credit in the University of California. Grade points are assigned as follows: for each unit of A, 4 points; B, 3 points; C, 2 points; D, 1 point; E and F, no points.

1. An applicant who was eligible for admission to the University in freshman standing (see page 19) may be admitted at any time he has established an overall grade-point average of C or better.

2. An applicant who was ineligible for admission to the University in freshman standing, but whose only deficiency arose from not having studied one or more of the required high school subjects, may be admitted when the following conditions are met:

a. He has established an overall grade-point average of C or better, and

b. He has satisfied, by appropriate courses, the subject requirements for admission to freshman standing (see page 19).

Exception: deficiencies in subject requirements will be waived in an amount not exceeding 2 high school units if the applicant has established a minimum of 56 units passed with a grade-point average of 2.4 or better. Subject deficiencies in excess of 2 units must be satisfied.

3. An applicant who was ineligible for admission to the University in freshman standing because of low scholarship or a combination of low scholarship and incomplete subject preparation (omission, or by grades of D or lower) may be admitted when the following conditions are met:

a. He has established a minimum of 56 units passed with a grade-point average of 2.4 or better, and

b. He has satisfied, by appropriate courses, subject requirements for admission to freshman standing (see page 19) except that subject deficiencies will be waived in an amount not exceeding 2 high school units.

Credit for Work Taken in Other Colleges

The University grants unit credit for courses appropriate to the curriculum in the University that have been completed in colleges and universities accredited by regional accrediting associations.

As an integral part of the system of public education of California, the University accepts, at full unit value, approved transfer courses completed with satisfactory grades in the public junior colleges of the State. Frequently, students who intend to complete their advanced studies at the University will find it to their advantage to complete the first two years of their college course in one of the many excellent California public junior colleges. After a student has earned 70 units acceptable toward a degree no further unit credit will be granted for courses completed at a junior college.

Extension courses taken at an institution other than the University may not be acceptable. The decision regarding their acceptability rests with the Office of Admissions.

Minor Deficiencies

The Admission Officer has authority and responsibility for waiving minor deficiencies when justified by unusual records or recommendations.

REQUIREMENTS FOR OUT-OF-STATE APPLICANTS

It has been necessary to place some limitation on enrollment of applicants who are not residents of California, and, therefore, only those of exceptional promise will be eligible for admission. The regulations below are designed to admit out-of-state applicants whose standing, as measured by scholastic records, is in the upper half of those who would be eligible under the rules for California residents.

Requirements for Freshman Standing

Graduation from High School

For schools outside California, the University determines the acceptability of the high school record.

Subject Requirements

The same subject pattern as for California residents is required (see page 19).

Scholarship Requirements

The scholarship requirements for in-state applicants (see page 20) apply to out-of-state applicants except that the applicant must have maintained a grade-point average of 3.4 or higher on the required high school subjects.

Admission by Examination

Out-of-state applicants who are ineligible for admission to freshman standing and who have not attempted college work subsequent to high school (except during the summer session between high school graduation and registration in the University) may qualify for admission by examination. The requirements for in-state applicants (see page 20) apply to out-of-state applicants except that the total score on the Scholastic Aptitude Test must be at least 1100 and the scores on the three Achievement Tests must total at least 1725. The score on any one Achievement Test must not be less than 500.

Requirements for Advanced Standing

In addition to the regular admission requirements (see page 21), out-of-state applicants for admission to advanced standing must meet the following regulations.

Required Subjects and Scholarship

The applicant must have maintained a grade-point average of 2.8 or higher in college subjects attempted and acceptable for transfer credit.

The applicant is expected to have fulfilled the pattern of required high school subjects, if not before high school graduation then by having included in his college program the courses needed to remove any subject shortages. However, deficiencies in subject requirements will be waived in an amount not exceeding 2 high school units if the applicant presents a minimum of 56 units passed with a grade-point average of 2.8 or higher. Subject deficiencies in excess of 2 units must be satisfied.

If the applicant did not have at the time of high school graduation an average of 3.4 or higher in courses satisfying the required subject pattern, he must present a minimum of 56 units passed with a grade-point average of 2.8 or higher.

ADMISSION TO SPECIAL STATUS

Special students are students of mature years who have not had the opportunity to complete a satisfactory high school program or who have not completed a substantial amount of college work and who by reason of special attainments may be prepared to undertake certain courses in the University toward a definite and limited objective. No person under twenty-one years of age will be admitted as a special student, nor will an applicant be admitted directly from high school. Only cases of unusual merit will be considered. A personal interview is usually required before final action in any individual case can be taken.

Conditions for admission are assigned by the Admissions Officer and are subject

to the approval of the dean of the college or school in which the applicant plans to study. Admission is for a specified time only and a prescribed scholarship average must be maintained.

An applicant for special status must submit transcripts of record from all schools attended beyond the eighth grade. He may also be required to take the examination in Subject A.

The University has no special courses. A special student may be admitted to those regular courses for which, in the judgment of the instructor, he has satisfactory preparation. A special student will seldom be able to undertake the work of the engineering and professional colleges or schools.

An applicant will not be admitted to special status for the purpose of making up requirements for admission to the University as a regular student.

ADMISSION TO LIMITED STATUS

Students in limited status are those with a bachelor's degree who are not candidates for an advanced degree or those without a bachelor's degree who have completed a substantial amount of college work with a satisfactory scholarship average and who by reason of special attainments may be prepared to undertake certain courses in the University toward a definite and limited objective. An applicant for limited status must submit transcripts of record from all schools attended beyond the eighth grade. The applicant may also be required to take examination in Subject A.

Conditions for admission are assigned by the Admissions Officer and are subject to the approval of the dean of the college or school in which the applicant plans to study. Admission is for a definite period, and a prescribed scholarship average must be maintained.

An applicant will not be admitted to limited status for the purpose of raising a low scholarship average.

ADMISSION OF APPLICANTS WITH BACHELORS' DEGREES

Ordinarily, an applicant with a bachelor's degree substantially equivalent to the bachelor's degree granted by the University of California should apply for admission to graduate status. An applicant with a superior record may occasionally qualify as a student in limited status or, after a complete change of objective, as an undergraduate seeking a second baccalaureate. In either case, the previous scholarship record must be such as to indicate very strong probability of academic success. Admission is subject to the approval of the Admissions Officer and of the dean of the school or college in which the applicant plans to enroll.

ADMISSION OF APPLICANTS FROM OTHER COUNTRIES

The credentials of an applicant for admission from another country in either undergraduate or graduate standing are evaluated in accordance with the general regulations governing admission. An application, official certificates, and detailed transcripts of record should be submitted to the Office of Admissions several months in advance of the opening of the semester in which the applicant hopes to gain admittance. Doing so will allow time for exchange of necessary correspondence and, if the applicant is admitted, will help him in obtaining the necessary passport visa.

An applicant from another country whose native language is not English may be admitted only after demonstrating that his command of English is sufficient to permit him to profit by instruction in the University. An applicant's knowledge of English is tested by an examination given by the University. Admission of an applicant who fails to pass this examination will be deferred until he has acquired the necessary proficiency in the use of English.

A student from a country where the language is not English is given college credit in his own language and its literature only for courses satisfactorily completed. Such credit will be allowed only for courses taken in his country at institutions of college level, or for upper division or graduate courses taken in the University of California or in another English-speaking institution of approved standing.

A student who is outside the United States and applies for admission to the lower division of the College of Engineering must pass with satisfactory scores the College Entrance Examination Board Scholastic Aptitude Test (verbal and mathematics sections) and achievement examinations in English composition, physics, and advanced mathematics. If he does not present satisfactory scores in these tests he will not be able immediately to undertake courses in the College of Engineering even though he is admitted to the University. Arrangements to take the tests in another country should be made directly with the Educational Testing Service, P. O. Box 592, Princeton, New Jersey 08540. The fee for these examinations should be sent to the Educational Testing Service, not to the University. The applicant should request that his scores in the tests be forwarded to the Office of Admissions.

The acquisition of health insurance is a condition of registration at the University of California for all foreign students except those in the United States on permanent immigration visas. Information about health insurance programs available will be sent to foreign students with the application for admission. For some campuses appropriate application forms will be included; on other campuses the application is a part of the registration procedure. For details, see page 34.

Foreign Student Adviser

An adviser is available to assist foreign students in all matters pertaining to their attendance at the University. It is urged that every student from another country, upon his arrival at the University, consult the foreign student adviser, Maxwell D. Epstein.

ENGINEERING EXAMINATIONS

The Lower Division Engineering Examination is not required for admission to the School of Engineering at Santa Barbara. A $5 fee is charged for the Upper Division Engineering Examination if taken with a group of three or more persons at the regularly scheduled times and locations; otherwise the fee is $10.

The Upper Division Engineering Examination is an achievement test that includes sections on English, mathematics, chemistry, physics, and lower division engineering subjects. It is required of all students who seek upper division status in one of the Colleges or Schools of Engineering, including those from the lower division of the University. The score on this examination is used in conjunction with the student's college record to determine the eligibility status of the student planning to enroll in the upper division engineering program offered by the University. Application forms will be supplied by the Office of Admissions upon request.

Upper Division examinations are given on announced dates at various test sites throughout the State.

The appropriate examination should be taken the semester preceding the one in which the applicant plans to register. Formal application for admission to the University as well as the application to take the test must be filed before the date scheduled for the examination.

ADMISSION TO GRADUATE STATUS

Students seeking admission to graduate status at the University of California must hold a bachelor's degree or its equivalent from an institution of acceptable standing.

The program of preparation should be substantially equivalent in both the distribution of academic subject matter and in scholarship achievement to the requirements for a comparable degree at the University of California. Applications for admission are evaluated in terms of scholastic qualifications and formal preparation for the graduate field of study.

The Dean of the Graduate Division, or the department in which the applicant wishes to pursue an advanced degree, may deny him admission if his scholastic record or his undergraduate program of study is judged not adequate as a foundation for advanced academic or professional study. This procedure applies to all applicants, whether they come from schools or colleges within the University of California or elsewhere. Individual departments may have special requirements for admission to graduate status, and certain departments and schools require an additional and special application for admission to their advanced-degree program.

Students who do not desire to become candidates for higher degrees must meet the same admission requirements as those who are prospective candidates for degrees. They must be admitted to a specific field of study and they must satisfy the Dean that their program of study has a definite scholarly or professional purpose. Such students are not eligible for exemption from the nonresident tuition fee.

Residence Hall room

Expenses, Housing, Awards, Financial Aid

STUDENT EXPENSES

The question of expenses while attending the University of California, Santa Barbara, is of importance to every student. Certain expenses are common to all students. Other expenditures are optional and vary considerably according to differences in interests.

Although each student must determine his own budget in keeping with his needs and resources, the University can provide the following as a guide in computing average annual expenses:

Room and board (20 meals a week) for two semesters in a University residence hall costs on the average	$880
An additional sum should be budgeted to cover Sunday evening meals which are not provided in the University residence halls	54
A required Residence Hall Association fee per year is	10
Registration fees, including the incidental fee ($220 per year), the Associated Students fee ($30 per year), and the University Center fee ($16 per year) amount to	266
Books and supplies per year may average	100
Personal expenses, including clothing, laundry and cleaning, recreation, and transportation average per year approximately	400
Average annual total	$1710

Students who are classified as nonresidents pay an additional $600 a year as tuition. Board and room costs for students making alternative housing arrangements will, of course, vary.

FEES

Application Fee. An applicant who wishes to enter the University must fulfill the general requirements for admission. Application blanks may be obtained from the Office of Admissions; University of California, Santa Barbara; Santa Barbara, California 93106. Every applicant for admission is required to pay a fee of $5 when his first application is filed. Remittance by bank draft or money order should be made payable to The Regents of the University of California.

Deposit Fee. Effective April 15, 1965 each student to be admitted will be required to return an Acceptance of Admission form, together with a non-refundable fee of $25, which fee will be credited to the incidental fee.

Incidental Fee. The incidental fee is $110 each semester for both undergraduate and graduate students. This fee, which must be paid at the time of registration, covers certain expenses of students for athletic and gymnasium facilities and equipment, lockers, laboratory and course fees, counseling and placement services, such consultation, medical advice, and hospital care, or dispensary treatment as can be furnished by the Student Health Service. No part of this fee is remitted to those students who may not desire to make use of all or any of these privileges.

Tuition. Tuition is free to every student who has been a legal resident of the State of California for a period of more than one year immediately preceding the opening day of the semester during which he proposes to enroll. Every student who has not been a legal resident of the State for said period is classified as a nonresident and is subject to payment of a nonresident tuition fee. A student entering the University for the first time should read carefully the rules governing the determination of residence as quoted below so that he may be prepared in the event of nonresident classification to pay the required tuition fee. Every entering student and every student returning

to the University after an absence is required to make a Statement as to Residence on the day of registration upon a form that will be provided for that purpose and his status with respect to residence will be determined soon after registration by the Attorney in Residence Matters.

Student Center Fee. A Student Center fee is charged all students registered for 6 units or more. The fee for 1964–1965 will be $8 per semester.

Associated Students' Membership Fee. The student body membership fee is $15 per semester and is paid at the time of registration.

Parking Fee. A fee of $15 per year has been levied for the parking of cars on campus. A fee of $1 is charged to register a second car by an owner.

Deficit Program. A student programmed for fewer than 6 units is not required to pay the Associated Students' fee. Waivers should be requested from the Registrar's Office *prior* to payment of fees. Students who change their programs to less than 6 units may request a refund of their Associated Students' fee of $15. This request must be made in the Registrar's Office by the end of the second week of classes. The Associated Students' membership card must be turned in with this request, and at that time the student relinquishes the privileges of an Associated Students member.

Miscellaneous Fees and Refunds. A schedule of miscellaneous fees and other information on this subject, *Student Fees and Deposits,* may be obtained from the Cashier, University of California, Santa Barbara.

No claim for remission of fees will be considered unless presented during the fiscal year in which the fee was paid. Receipts are issued for all payments, and these receipts should be retained. Refunds may not be made until the original receipt is surrendered.

All fees are subject to revision by The Regents of the University of California.

RULES GOVERNING RESIDENCE

The residence classification of each student is determined in accordance with Section 244 of the California Government Code, Sections 23054, 23055 and 23057 of the California Education Code and the Standing Orders of The Regents. It is therein provided that a resident student is any person who has been a legal resident of the State of California for more than one year immediately preceding the opening day of the semester during which he proposes to enroll.

The attention of the prospective alien student is directed to the fact that he is a nonresident unless, in addition to the general residence requirements for tuition purposes, he has been admitted to the United States for permanent residence in accordance with all applicable laws of the United States. The attention of the prospective student who has not attained the age of 22 and whose parents are not California residents, and the attention of the veteran who was not a resident of California at the time of his entrance into the Armed Forces, is directed to the fact that presence in California for more than one year does not, of itself, entitle the student to classification as a resident.

Every student who is classified as a resident but who becomes a nonresident of California is obliged to notify the Attorney in Residence Matters at once. Application for a change in classification with respect to a previous semester will not be received under any circumstances.

A person incorrectly classified as a resident student is subject to reclassification as a nonresident. If the incorrect classification resulted from concealed facts or untruthful statements made by him, the student then shall be required to pay all tuition fees which would have been charged to him as a nonresident student. He shall be subject also to such discipline as the President of the University may approve.

The eligibility of a student to register as a resident may be determined only by the Attorney in Residence Matters. If the student is in doubt about his residence status, he may communicate with that officer at 590 University Hall, University of California, Berkeley, California 94720.

Students classified as nonresidents are required to pay a tuition fee of $300 each semester. This fee is in addition to the incidental fee. (Exemption from payment of the nonresident tuition fee may be granted to an unmarried minor whose parent is in the active military service of the United States and is stationed in California on the opening day of the semester during which the minor proposes to attend the University. It is the responsibility of the student to file official verification of this fact from the parent's commanding officer. This verification should be addressed to the Registrar and filed when the student declares residency.) Graduate students may have part or all of the nonresident tuition fee waived under certain conditions set forth in the *Announcement of the Graduate Division.*

HOUSING

Students who do not live in their own homes or with relatives or friends may obtain assistance in locating living accommodations through the Office of Housing Services.

The various types of housing available to students are: campus residence halls, apartments, duplexes, sororities or fraternities, and a limited number of room and board arrangements.

Residence Halls

There are accommodations for 2,020 single students in residence halls on the campus. Las Casitas, Santa Cruz, and Santa Rosa Halls are for women and Anacapa, San Miguel, and Las Casitas Halls are for men. All resident students eat in De la Guerra or Ortega Dining Commons located near the residence halls. The price per academic year for room and board (20 meals per week) is $850 for the Las Casitas Halls and $880 for Anacapa, Santa Cruz, San Miguel, and Santa Rosa Halls. These rates are subject to change. The majority of the rooms are double rooms. Rooms are furnished with single beds, pillows, linens, dressers, chairs, bookcases, and desks. Blankets, bedspreads, and study lamps are supplied by the students. The residence halls are closed during the Thanksgiving, Christmas, and spring recesses and between semesters. Group life in the residence halls provides an opportunity for democratic living and is designed to contribute to the educational experiences of the student. Special efforts are made to provide leadership experiences for the residents.

Accommodations with Private Householders

There are apartments and duplexes in the neighboring area for students who do not live on the campus. The types of housing available are:

1. Room and board: $425–$450 per person each semester.
2. Rooms with or without cooking privileges: $130–$200 per person each semester.
3. Exchange: Rooms in private homes where students work approximately 15 hours per week in exchange for room and board.
4. Apartments: $180–$270 per person each semester. Sophomore, junior and senior women are eligible to live in apartments but must obtain approval from parents and the Housing Supervisor for this type of housing. Upper and lower division men are permitted to live in apartments.

Accommodations for Married Students

There are 250 University operated apartments located near the campus. These units are unfurnished, except for a stove and a refrigerator, and rent for $75–$95 per month including utilities.

Other housing is available in Isla Vista, Goleta and Santa Barbara. The Housing Services Office maintains a bulletin board with current rentals which include apartments, duplexes, and houses.

Sororities and Fraternities

The eight sororities and ten fraternities own or lease houses near the campus and provide lodging and meals for their members (see section on student activities).

General Information

There are listings of off-campus housing available to any student who desires to call in person at the Housing Services Office. It is recommended that arrangements be made by the student directly with the householder rather than by mail. There should be a clear understanding by both parties, preferably in writing, as to rental prices, intended length of stay, charges to be made during vacation periods, etc. When an accommodation is engaged, it is expected that the student will remain the entire semester. The off-campus houses are located in Isla Vista, adjacent to the west edge of the campus; in Goleta, two miles from the campus; and in Santa Barbara, ten miles from the campus. Public buses run on a regular schedule from Santa Barbara to the campus and the fare is 30 cents each way.

Advice and more information about living accommodations may be obtained by writing to the Office of Housing Services, Administration Building. Applications for housing are accepted beginning July 1 of each year for the fall semester of the following calendar year. (For example, a student planning to enter in the fall of 1965 may apply beginning July 1, 1964.) Early application is encouraged because rooms on the campus are reserved in chronological order of application.

SCHOLARSHIPS

The University has a number of scholarships and fellowships available to entering students, graduate and undergraduate, as well as to those already in attendance. A circular on Undergraduate Scholarships may be obtained from the Scholarship and Loan Office. The rating of candidates for scholarships is based on excellence in high school or college scholarship, financial need, and promise. Each year a number of Regents Scholarships are also awarded. These are for periods of two or four years to entering freshmen and juniors (either resident students or those transferring from other institutions). These awards are based on demonstrated academic achievement and promise, regardless of financial need (no financial assistance will be made to a student who has not filed a Parents' Confidential Statement). Applications should be addressed to the Chancellor.

The deadline for filing applications is February 15 for all entering students and January 15 for all continuing students for the following academic year. Transcripts of high school record through first semester of senior year must be sent directly to the Committee on Undergraduate Honors, Scholarships and Prizes; University of California, Santa Barbara; Santa Barbara, California 93106.

Entering students may also apply for the California Alumni Association Awards, which are tenable on any of the campuses of the University. They should specify their choice of Santa Barbara on the application form. The Alumni application forms may be obtained from the Committee on Undergraduate Scholarships, University of California, Berkeley, California 94720.

Information about scholarships and fellowships for graduate students may be obtained from the Dean of the Graduate Division.

PRIZES

Through the generosity of friends of the University, prizes are available to students in accordance with the conditions laid down by the donors. Information about these competitions will be published from time to time in the campus newspaper.

HONORS AT ENTRANCE

All entering freshmen are considered for Honors at Entrance on the basis of their high school records. Honors recognition at the time of admission is given to entering freshman students with outstanding high school scholastic records. Certificates are presented to the Honors recipients shortly after registration in the University.

HONORS AT GRADUATION

Students who have completed their fields of concentration with distinction and who have general records satisfactory to the Committee on Undergraduate Honors, Scholarships, and Prizes are recommended for graduation with honors, high honors, or highest honors.

GRANTS-IN-AID

Grants-in-Aid consisting of monies to help defray expenses of students have been donated by the Affiliates of the University and other interested individuals and groups in the community. These funds are usually for no more than the amount of the Incidental Fee and are often designated for students studying in special fields of endeavor. Students interested in and qualifying for such assistance should contact the departmental office of their major field of study or the Dean of Students Office for information.

Also, funds have been donated by the Santa Barbara County Society for Crippled Children and Adults and Hillside House for the study of, and work with, cerebral palsied children, and these funds have been allotted to a number of students professionally interested in the field of speech correction.

LOANS

The Federal Government, Board of Regents, various organizations, and individuals have contributed toward the creation of several student loan funds. The gifts for this purpose are administered by the University in accordance with the conditions laid down by the donors and the administrative regulations of the Board of Regents. Unless otherwise specified, loans are made without interest while the student is in the University. Students in good standing who are facing emergencies should apply to the office of the Dean of Students for further information. Loans are available from the following:

California Federation of Women's Clubs Loan Fund
Mary L. Cheadle Emergency Loan Fund for Foreign Students
Lawrence E. Chenoweth Memorial Loan Fund
David Gray, Jr., Loan Fund
Willis Edwin Leonard Memorial Loan Fund
Ednah Rich Morse Loan Fund
Isabelle Price Loan Fund
Santa Barbara County Federation of Women's Clubs Foreign Students Loan Fund
Santa Barbara Senior Loan Fund
Schurer O. Werner Memorial Loan Fund
Warren E. Schutt Memorial Loan Fund
Pioneer Memorial Student Loan Fund
Laura E. Settle California Retired Teachers Association Fund
Elias Hick and Edward Jones Foreign Students Loan Fund
Regents Loan Fund
National Defense Educational Act Loan Fund
Los Rancheros Pobres Loan Fund

Small short-term loans are also available for undergraduates in the Associated Students' Business Office.

Gathering outside South Hall

Student Services and Activities

STUDENT HEALTH SERVICE

A Student Health Service, staffed by qualified professional personnel and equipped with modern diagnostic and treatment facilities, is maintained by University of California, Santa Barbara. Its purpose is to conserve time for classwork and studies by the prevention and treatment of the majority of injuries and illnesses which students might incur during their enrollment on the Santa Barbara campus. In addition, all required medical evaluations are performed at the Health Center, one of which is the evaluation necessary for all students entering for the first time or returning after an absence of one semester or more, or after having discontinued school because of illness.

Each student registering in the fall and continuing through the spring semester, and each student registering in the spring semester may, at need, have such medical care as the Student Health Service is staffed and equipped to provide from the first day of the semester in which the student first registers during the academic year to the last day of the spring semester of the same academic year, or to the date of official withdrawal from the University. Additional service may be provided for seven days after the last day of the semester at the discretion of the Director of the Student Health Service. Any prospective registrant who receives health service and who does not register for the next following semester shall be required to pay toward the cost of the service rendered him up to the amount of the incidental fee.

It is to be emphasized that this service is made possible by the Incidental Fees of the students, but is not a total health insurance plan; therefore, the services are limited by the staff and facilities available. A supplementary Health and Accident Insurance Plan for students may be purchased at the Associated Students' Business Office. This low-cost plan covers students when away from the campus and during vacations. It is also available for wives or children. *Purchase of this plan is strongly advised.*

If a student is hospitalized and it becomes obvious he cannot expect to continue his classes successfully, he will not be discharged to his home or family physician until he can be safely moved.

It is recommended that prospective students have existing physical defects corrected prior to enrollment at Santa Barbara. The Student Health Service will be unable to assume responsibility for treatment of abnormalities present at the time of admission, or for visual or dental defects.

The student should bear in mind the fact that the Health Service may supplement but does not supplant the family physician. Full and mutual cooperation is encouraged between student, Student Health Service, and the family physician.

STUDENT COUNSELING

The counseling program at Santa Barbara gives attention to the individual needs and capabilities of all students.

Students who contemplate attending the University may receive advice from the deans and department chairmen. After admission the student is assigned an academic adviser by his department chairman. The student must consult his adviser for assistance in all curricular matters and program planning.

The Dean of Students and his staff are available for discussion and advice in regard to general orientation to college life, study techniques, study loads, social problems, housing, employment, loans, scholarships, vocational planning, and personal problems. The Foreign Student Adviser is available for special consultation in the Dean's office.

Through the Counseling Center, students are provided professional assistance in

educational and vocational planning, and with personal problems that might be a deterrent to the student's progress in the University.

The Dean of the College of Letters and Science is responsible for the general curricula followed by all students in that college. He counsels students in regard to the nature and organization of majors, changes in majors, and the general education program.

Deans of the Schools of Education and Engineering provide advice and counsel with regard to programs of study and other problems related to professional preparation in their areas of study.

INFORMATION FOR VETERANS

Veterans and war orphans eligible for educational benefits should obtain an authorization certificate from the United States Veterans Administration Regional Office at 49 Fourth Street, San Francisco 3, or 1380 South Sepulveda Boulevard, Los Angeles 25, California. This certificate should be filed at the time of registration with the Dean of Students, Administration Building. State veterans and veterans' dependents may obtain authorization from the State Department of Veterans Affairs, Division of Educational Assistance, P. O. Box 1559, Sacramento 7; or 350 McAllister Street, San Francisco 2; or 1736 Westwood Boulevard, Los Angeles 24, California. State veterans and dependents will report to the Office of the Dean of Students, where they may obtain deferment of fees.

All veterans and veterans' dependents should be prepared to maintain themselves financially for a period of from 60 to 75 days pending receipt of their first subsistence checks.

SELECTIVE SERVICE

Matters relating to the deferment of students eligible under Selective Service are handled by the Office of the Dean of Students, Administration Building. Certifications regarding enrollment, class standing and other pertinent information will be submitted to the student's Selective Service board upon request. To be considered for deferment by Selective Service, the student must be pursuing a full-time course of instruction. For undergraduates this consists of at least 30 units per year (July 1 to June 30) and must include at least 12 units passed each semester. *Noncredit courses such as Subject A are not included.* Students who plan to seek deferment continuously until qualified for the bachelor's degree should understand that present policies of Selective Service permit continuous deferment only through the eighth semester of college residence, including not only the period of residence at the University of California, but also all semesters spent at junior colleges or other collegiate institutions. Students should plan course sequences for several semesters ahead so that prerequisites for all desired advanced courses can be satisfied within the eight-semester period. To qualify as a full-time graduate student, the student must be in residence, actually spend full time on his studies, and meet the criteria generally applied for normal progress toward the degree—that is, two years or less for the master's degree and four years or less for the doctor's degree (including time spent working toward the master's degree, if taken). Students desiring deferment on the basis of enrollment in the R.O.T.C. program should consult the Department of Military Science.

PLACEMENT OFFICE

Student Part-Time Employment

The faculty expects a student to devote the major part of his time to his studies. Although many students plan to earn part or all of their expenses, it is strongly advised that students attempt no outside employment until they have made satisfactory

adjustments to the demands of their academic work and of university life. Some students are able to carry an average program and from ten to twenty hours of outside work without jeopardizing scholarship, health, or participation in college activities. *It is recommended that lower classmen plan to work no more than twenty hours a week.* Outside employment should be reduced or discontinued if it interferes with academic work, since the student's first responsibility is to his studies. Applications for part-time work are made through the Placement Office, Room 1325H, Administration Building.

If a student is largely self-supporting or not in good health, he must consider at the outset that more than the minimal number of semesters may be necessary to obtain a degree.

A student should not arrange for employment until his academic program is planned for the semester. If his program does not permit regular working hours throughout the semester, the student should seek employment of shorter duration or irregular hours which may be fitted into his program. There are part-time jobs available for women and men; however, it is not always possible at the time of registration to place each student desiring employment.

Men and women students interested in working part time must register with the Placement Office. There are opportunities for various types of employment, including work on an exchange basis for board and room.

Any student employed ten or more hours per week should so notify the Office of the Dean of Men or the Office of the Dean of Women.

Educational Placement Service

The Educational Placement Service recommends graduates, students, and former students for teaching, administrative, supervisory and research positions in universities, colleges, junior colleges, high schools and elementary schools in this country and abroad.

No fee is charged matriculated students or former students of regular sessions or graduates of the University of California; there is no expense to school officials seeking teachers or administrators through this office, which is located in Room 1325, Administration Building.

The Educational Placement Service registers candidates and assembles information into confidential files concerning the background, training, and professional experience in order to match qualifications of candidates with specifications of available positions. Placement interviewers counsel candidates, communicate with employers, arrange interviews, and recommend the best available candidates, considering former students as well as those currently graduating. In assisting qualified candidates to obtain permanent employment or promotion in the work for which they have prepared themselves, the University reserves the right to recommend only those persons who are considered to be fully qualified.

All candidates for positions are expected to reimburse the Placement Office for telephone messages and telegrams found necessary by Placement Interviewers in transactions in behalf of the students.

Student and Alumni Placement Center

Through the facilities of the Student and Alumni Placement Center, a staff of professional interviewers is available for consultation and guidance on career planning and placement.

Candidates for a degree, graduate or undergraduate, are urged to register as soon as possible in their last year in order that they may be referred well in advance of graduation to employers from business, industry and government. Such referrals may

involve off-campus interviews at plant headquarters or on-campus interviews by employer representatives who visit the Placement Office annually from October through May. All majors are offered a wide range of career opportunities.

This service is available to all regularly enrolled students of the University, their spouses, and alumni of the University who are unemployed or who desire career relocation. The Student and Alumni Placement Center is located in Room 1325, Administration Building.

THE ASSOCIATED STUDENTS

The undergraduate student self-government is organized and administered by the Associated Students. All undergraduates hold membership by virtue of paying the required ASUCSB membership fee at registration. The organization has a Legislative Council and a working system of committees and boards. It provides a spectrum of activities which contribute to the enrichment of the undergraduate's college experience.

Members are entitled to participate in the affairs of the Associated Students, to a subscription to the campus newspaper, *El Gaucho,* and a free copy of the yearbook, *La Cumbre.* Other benefits include free admissions to athletic events, reduced admissions to dramatic, social, and similar events which are part of the program of the Associated Students.

The Association offices are located in the Student Union area. The students own and operate the Campus Bookstore and Food Service located in the Student Union. The Associated Students Executive Director's Office supervises the business operations of the Association and also offers a variety of services such as check cashing, health insurance, and small short-term loans.

THE STUDENT UNION

Within the Student Union are lounge and meeting rooms, the Campus Bookstore, the Associated Students offices, the Student Union Coffee Shop, Barber Shop, and other facilities incident to student activities on campus. This facility is operated by the Associated Students.

STUDENT ACTIVITIES

Student Organizations. The major student organizations include the Associated Students, the Associated Women Students, and departmental and class organizations.

Residence Hall Organizations. Students in residence halls are organized in living groups and conduct social, recreational, and cultural activities for their members. All these organizations are integrated by means of a Residence Hall Association. Student government at this level is coordinated with the Associated Students through participation of Residence Hall Association Council members on appropriate Associated Student committees and boards.

Sororities and Fraternities. There are eight national sororities and ten national fraternities. These function through the Panhellenic Council and the Interfraternity Council respectively. New women students may apply for Fall Rush after July 1, 1964. The deadline for return of completed application forms will be given on application material. Further information about these organizations may be secured from the Office of the Dean of Students.

In addition to these, the University of California, Santa Barbara, offers opportunity for membership in many national honorary professional fraternities, national and local service organizations, and special-interest groups. There are seven academic honorary organizations and nine honorary service organizations as listed below. In addition, there are a number of departmental clubs not listed.

Honorary Organizations

Cal Club (Intercampus)
Delta Phi Upsilon (Early Childhood Education)
Kappa Delta Pi (Education)
Phi Alpha Theta (History)
Pi Sigma Alpha (Political Science)
Scabbard and Blade (Military Science)
Theta Alpha Phi (Dramatics)

Honorary Service Organizations

Block C (Lettermen)
Blue Key National (Upperclassmen)
Chimes (Junior Women)
Colonel's Coeds (R.O.T.C. support)
Crown and Scepter (Senior Women)
Honey Bears (Women's Hostess Group)
Phrateres (All Women)
Spurs (Sophomore Women)
Squires (Sophomore Men)

Student Activities. The Associated Students sponsors the publication of a newspaper, a yearbook, a directory, a program of intercollegiate athletics, debating, radio programs, speech contests, dramatics, a dance concert, musical productions, assembly programs, and a special program of dances, picnics, and forums.

Eligibility for Office in Student Organizations. In order to be a candidate for office, or to maintain an office, a student must have a total scholastic average of at least a grade C, and must have earned at least a grade C average the previous semester and carry a program of no less than 12 units, unless practice teaching is a part of the program.

STUDENT MAIL

Students residing on campus may receive mail addressed to them as follows: Name; Residence Hall; University of California, Santa Barbara; Santa Barbara, California. A United States Post Office substation is located in the De la Guerra Dining Commons complex. Its services include selling stamps and money orders, mailing insured or other packages, handling all kinds of mail, and renting locked mail boxes.

Students living off campus may have their mail sent directly to their college residences or they may wish to use the University substation. They are eligible to rent the locked mail boxes which would afford them the opportunity of picking up mail at their convenience.

General Regulations

APPLICATION FOR ADMISSION

Prospective students are warned of the necessity of making early application for admission in order that their credentials may be processed in time to permit registration within the scheduled period. New undergraduate students must file applications for admission, with complete credentials, not later than March 1 for the fall semester and not later than October 15 for the spring semester.* Undergraduate applications for readmission must be filed not later than August 15. For new graduate students (including undergraduate students entering graduate status for the first time), these dates are August 1 and December 1 respectively.

REGISTRATION

Each student must register at the University of California, Santa Barbara, at the time appointed for that purpose, at the beginning of each semester. Registration procedure includes: payment of fees; the completion of registration forms; enrollment in courses; clearance with certain offices as indicated in registration and enrollment instruction; and presentation of the completed packet to the Registrar.

Failure to register within the prescribed time limit (see pages 5–7) is certain to cause difficulty in the making of a satisfactory program and to retard the progress both of the student himself and of each class to which he may be admitted. *After the first week of instruction,* registration will be permitted only under unusual circumstances.

Every graduate student in good standing, unless granted a formal leave of absence or honorable dismissal by the Dean of the Graduate Division, will be required to register with the Registrar of his campus each semester until the completion of all requirements for the degree for which he is working. Failure to register or to obtain formal permission to leave the University will constitute presumptive evidence that a student has withdrawn from the Graduate Division. No graduate student should leave the University without obtaining the form of release appropriate to his situation. In case of doubt, students should seek advice from the Graduate Division.

MEDICAL EVALUATION

All new students (graduate and undergraduate, including transfer students from other campuses of the University and those students returning after an absence of one or more semesters) must appear at the Student Health Service for medical evaluation so that the health of the University community, as well as that of the individual student, may be safeguarded. This evaluation must be accomplished prior to completion of registration.

Every new student entering the University will receive with his application papers a form for certification of a successful smallpox vaccination within the last three years. This completed form must be returned to the Student Health Service by August 15 for the fall semester, and by January 15 for the spring semester. The student may be saved considerable time and inconvenience if he will *bring with him at the time of examination:* (1) his eyeglasses or contact lenses; (2) valid written evidence that he has had within the past six months either a negative tuberculin skin test or a chest X-ray negative for active tuberculosis; (3) past record of tetanus shots.

* The deadline for filing applications for admission to the spring semester 1965 is December 15.

Before coming to the University every student is urged to have all defects capable of being remedied, such as dental cavities, defective hearing, or defective eyesight, corrected. This will prevent possible loss of time from studies.

SUBJECT A: ENGLISH COMPOSITION

With the exceptions noted below, every undergraduate entrant must, at the time of his first registration in the University, take an examination known as the *Examination in Subject A*, designed to test his ability to write English without gross errors in spelling, grammar, diction, sentence structure, and punctuation.

The examination in Subject A is given at the opening of the fall semester, the spring semester, and the summer session. A second examination, for late entrants, is given not later than two weeks after the first examination in each semester; for this late examination a fee of $1 is charged.

Papers submitted in the examination are rated either "passed" or "failed." No student may have the privilege of reëxamination in Subject A.

A student who has received a score of 600 or better on the examination in English Composition administered by the Educational Testing Service for the College Entrance Examination Board will receive credit for Subject A. A student who has passed an examination in Subject A given by the University or given under the jurisdiction of the University at various centers in the State annually in April or May will receive credit for Subject A.

A student who enters the University of California at Santa Barbara with credentials showing the completion in another accredited college or university, with a grade not lower than C, of one or more approved college courses in English composition (totaling at least 3 semester units, or the equivalent, of transferable college credit) is exempt from the requirement in Subject A.

Every student who does not pass the examination in Subject A must immediately enroll for one semester in the *Course in Subject A*, without unit credit toward graduation. Should any student fail in the course in Subject A, he will be required to repeat it in the next succeeding semester of his residence at Santa Barbara.

Every student who is required to take the course in Subject A is charged a fee of $35. The charge will be repeated each time he takes the course. This fee must be paid before the study list is filed.

No student will be granted the bachelor's degree until he has satisfied the Subject A requirement.

Students who fail in the examination in Subject A and who maintain a grade of A in the *Course in Subject A*, shall on recommendation of the Committee on Subject A be permitted to discontinue attendance in the course at a date to be determined by that committee and be given credit for Subject A.

Students from other countries whose native language is not English should take the special examination in English for foreign students rather than the Subject A examination. Those who pass this special examination will be credited as having met the Subject A requirement, as will students who subsequently complete, with a grade of C or better, Speech 26, the advanced course in English for foreign students.

GENERAL EDUCATION CURRICULUM

All students must meet the general education requirements outlined in this section except that transfer students may, if they desire, fulfill the general education program that was in effect here at the time they were freshmen, or which was in effect three years previous to their enrollment here, whichever is the more recent.

	Units
1. English 1A–1B† (must be completed in freshman year, unless delayed by Subject A)	6
2. Foreign Language (Ancient or Modern)	0–12
*May be met by completion of language 3 (third semester), or by passing language 2 or its equivalent in each of two foreign languages.	
3. Humanities (5 courses)	12–17
a. Literature, English or Foreign.	(3)
b. Philosophy 1 or Philosophy 5 (Either sequence 6A–6B or 20A–20B may be substituted)	(3–6)
c. Fine Arts, History and Appreciation Art: 1, 4, 8, 102 through 117 Dance: Physical Education 45 Music: 15, 16, 115 through 119 Theater: Speech and Drama 45, 160A, 160B, 160C	(4–5)
d. Humanities Elective One additional course from 3a, b, c above, or Speech 11, 101, or 180, or any Philosophy course numbered over 10 (but *not* including 20B if that course has already satisfied 3b, above), or Religious Studies (any course).	(2–3)
4. History, Social Sciences, Psychology	12
**a. History: any course	(3)
b. Two courses in separate areas from the following: Anthropology 2 or 101 **Economics: any course except accounting or statistics **Political Science: any course Psychology 1, 11, or 101 Sociology 1 or 101	(6)
c. One course from the following: Anthropology (except physical) **Economics: any course except accounting or statistics Geography (except physical) **History: any course **Political Science: any course Psychology: any course Sociology: any course	(3)
5. Natural Science and Mathematics	11–12
a. Biology 20 or Botany 20, including laboratory	(4)
***b. Chemistry, Geology, Physics, including laboratory course	(4)
c. One course from the following: Anthropology (physical) Astronomy Biology Botany Chemistry Geography (physical) Geology Mathematics Physics Zoology	(3–4)
6. Physical Education (activities)	2

The 2-unit requirement in physical education must be satisfied by enrollment in activity courses through four consecutive semesters in the freshman and sophomore years. Transfer students who have not fulfilled this requirement at the time of their entrance must fulfill it in their first semesters here. Exceptions to this rule can be granted only by the Dean of the College of Letters and Science.

† Any student may, at the discretion of the Department of English and on the basis of markedly superior performance in English 1A, be allowed to take English 36, 37, 38B, or 48 in lieu of English 1B.

* The college requires the completion of course 3 in one language or course 2 in each of two languages. The requirements may be satisfied partially or wholly by one foreign language taken in high school as follows:

Two years of high school foreign language = University course 1

Three years of high school foreign language = University courses 1 and 2

Four years of high school foreign language = University courses 1, 2, and 3

Students continuing their high school language in the University should do so as soon as possible after entrance. Foreign students should consult the Foreign Student Adviser.

** The attention of the student is directed to the requirement in American History and Institutions described on page 42.

*** A student who has received high school credit for a year course in chemistry (or physics) with a grade of C or better will not be permitted to count Chemistry 20 (or Physics 20) as part of his General Education Program.

AMERICAN HISTORY AND INSTITUTIONS

A knowledge of the provisions and principles of the United States Constitution and of American history, including American institutions and ideals, and of the principles of state and local government established under the Constitution of the State of California, is required of all candidates for the bachelor's degree. This requirement may be satisfied by any of the following choices (under certain circumstances the Committee on American History and Institutions will give approval to various additional combinations of the courses listed below; for example, History 8A–17B, History 17A–8B, History 17A–171, etc.):

1. Political Science 20 and one of the following: History 17A, 17B, or 8B.
2. History 17A–17B.
3. History 8A–8B.
4. Any two upper division courses chosen from the following: Political Science 100, 113, 152, 166, 167, 172; History 171, 172A, 172B, 173A, 173B, 174A, 174B, 175A, 175B, 177, 181; Economics 113.
5. Political Science 20 and any one of the upper division courses, except Political Science 100, listed in 4 above.
6. Passing a noncredit examination in American history or American institutions. For further information see the Department of History or the Department of Political Science.
7. Presenting evidence that the requirement has been satisfied at another collegiate institution whose credits are acceptable for transfer at the University of California, Santa Barbara.

Credit for any of the above courses earned in University Extension or in summer session may be used in fulfilling this requirement.

FOREIGN LANGUAGE PLACEMENT EXAMINATION

All undergraduate students entering directly from high school, except those who have already fulfilled their foreign language requirements by completion of four years of one language or three years in each of two languages in high school, and who have no intention of continuing language study in the University, must take the Foreign Language Placement Examination, the purpose of which is to determine the level of the language course to be taken.

If such students later wish to take a language studied in high school, they must complete the placement test at the begining of the semester in which they wish to enroll. It is not necessary to take a placement test in order to enroll in a new language.

Students transferring to the University from junior colleges, state colleges, or private colleges are not required to take the placement examination.

The placement examinations in French, German, and Spanish are given at the opening of the fall and spring semesters.

Students who have taken the Foreign Language Achievement Test administered by the Educational Testing Service for the College Entrance Examination Board are excused from the placement examination provided their scores have been submitted to the Admissions Office.

Students who have had *two years* of a foreign language in high school and who are placed in Language 1 will receive a grade but *no unit credit* for the course. Students who have had *three years* of a foreign language in high school and who place in Language 2 will receive *two units of credit* for the course. Students who have had *four years* of a foreign language in high school and who place in Language 3 will receive *two units of credit* for the course; if they place in Language 2 they will receive a grade but *no unit credit*.

Full credit will be allowed for completion of foreign language courses in the junior colleges and four year colleges even if they duplicate high school courses.

The College of Letters and Science requires the completion of course 3 in one language or course 2 in each of two languages (see General Education Curriculum).

PSYCHOLOGICAL EXAMINATION

For purposes of advising, counseling and research, psychological examinations will be given to new students during the summer (contact the Counseling Center for dates) and during the week of registration. (See details in the *Schedule of Classes and Directory.*)

MUSIC PLACEMENT EXAMINATION

All new music majors, whether freshmen or transfers from other institutions, are required to take placement tests in music theory and performance. These tests determine which courses in these fields shall be elected by the new music major.

PROFICIENCY EXAMINATIONS FOR TEACHING CREDENTIALS

All candidates for teaching credentials must pass a proficiency examination in the basic school subjects before being allowed to register for student teaching. This examination should be taken during the sophomore or junior years, and transfer students entering UCSB at a higher level should take the examination on entry.

Candidates for teaching credentials who have completed a speech course at another institution must also take a speech proficiency test.

These examinations are customarily scheduled at the beginning of each semester. (See "Registration Week Events" in the current *Schedule of Classes and Directory.*)

THE RESERVE OFFICERS' TRAINING CORPS (R.O.T.C.)

The Morrill Act of July 2, 1862, creating the system of land-grant institutions, of which the University of California is one, required those institutions to offer military training courses. Military training at the University of California is offered on a voluntary and selected basis. Both basic and advanced courses in R.O.T.C. are given in the Department of Military Science. The United States government furnishes arms, equipment, uniforms, and textbooks for students formally enrolled in military training courses.

GRADES OF SCHOLARSHIP; GRADE POINTS

The final result of the work of a student receiving instruction in the University of California, Santa Barbara, shall be reported in reference to each course in accordance with a scale of six scholarship grades, four of which are passing, as follows: A, excellent; B, good; C, fair; D, barely passing; E and F, not passing. Grades are not otherwise defined, as for example, by percentages, or by a rule stipulating the manner in which the several grades shall be distributed.

Grade E (not passed) indicates a record below passing, but one which may be raised to a passing grade without repetition of the course by passing a further examination or by performing other tasks required by the instructor. No credit may be awarded to a student who has received a grade E in a course unless he has passed the final examination in that course. Grade F (not passed) denotes a record so poor that it may be raised to a passing grade only by repeating the course.

The term "incomplete" is not used in reporting the work of students. The instructor

is required to assign, for every student, a definite grade based upon the work actually accomplished, irrespective of the circumstances which may have contributed to the results achieved.

Course reports filed by instructors at the end of each semester are final, not provisional.

Grade points are assigned to the respective scholarship grades as follows: for each unit of credit, the scholarship grade A is assigned 4 points; B, 3 points; C, 2 points; D, 1 point; E and F, no points. In order to qualify for the bachelor's degree, a student must have obtained at least twice as many grade points as there are units in the total credit value of all courses undertaken by him in the University of California.

At the end of the semester or the summer session, a student may obtain his course grades by depositing with the Registrar a self-addressed, stamped envelope.

Withdrawal from a Course. To withdraw from a course after the fourth week (the period for change of program established by the Executive Committee of the college or school in which the course is offered), a student must obtain by petition the approval of the Dean of his school or college. In each case the Dean shall consult the instructor involved. At the Dean's discretion, the Dean may cancel the student's enrollment in the course, or he may excuse the student from attending the course and direct the Registrar to enter a grade of F on the student's official record. The Dean may also stipulate that re-enrollment in the course will be authorized only with his approval. The Registrar will enter a grade of F for each unauthorized withdrawal from a course.

Addition of Courses. No student may add a course to his program after the end of the third week of instruction.

OTHER PROVISIONS CONCERNING SCHOLARSHIP

Mid-semester Warning. Warning notices are sent at mid-semester to students who have received an average of D or F in any course. A student who at the middle of any semester has received these unsatisfactory grades in two or more subjects shall be interviewed by his adviser.

Failures and Repetition of Courses. A student who fails in the first semester of a course may not continue for the second semester of that course until the failure is removed, except upon special permission of the instructor.

REMOVAL OF DEFICIENCIES

A student who receives a grade lower than C in a lower division course may repeat the course. The units will count only once toward the degree; however, he will be charged with the units undertaken on each attempt. Upon repetition of the course, the student will receive the grade assigned by the instructor and grade points appropriate to that grade. The foregoing privilege does not apply to grades received in upper division or graduate courses. A student who receives grade E or F in an upper division or graduate course may repeat the course. The units will count only once toward the degree; however, he will be charged with the units undertaken on each attempt. Upon repetition, the student will receive the grade assigned by the instructor but for the repetition cannot receive more than two grade points per unit. (For exceptions, see below.)

Special provision is made for students whose university work has been interrupted by one year or more of service with the armed forces of the United States and who, prior to such service, had undertaken one or more courses forming part of an announced sequence of courses. Such a student may, with the approval of the Dean of the College of Letters and Science (or, in the case of graduate students, with the

approval of the Dean of the Graduate Division), be permitted to repeat any course previously undertaken in the sequence, irrespective of the grade previously assigned, and to receive the new grade assigned by the instructor and grade points appropriate thereto; provided, however, that for a course so repeated, the student may receive unit credit toward graduation, or toward the satisfaction of major requirements, only in an amount not to exceed the difference between the full unit value of the course and the number of units, if any, which he has previously received from the same course.

For the purpose of raising grade E to a passing grade, an undergraduate student may, with the consent of the instructor concerned and of the Dean of the College of Letters and Science, have the privilege of a "condition examination." For graduate students this privilege can be granted only by the Dean of the Graduate Division. In courses of the summer sessions no "condition examinations" may be given except upon the approval of the Director of Summer Sessions.

Any examination, term paper, or other exercise which the instructor may require of the student in order to raise grade E to a passing grade in a course is a "condition examination." For every such examination, a formal permit, to be obtained in advance from the Registrar, must be shown to the instructor in charge of the examination; otherwise, he will lack authority to consider and report upon the work submitted by the student. The fee for a permit is $4, regardless of the number of courses entered thereon. A form of petition for a special examination or for admission to an examination with a class, with instructions concerning procedure, may be obtained from the Registrar. Grade E in a course in which a final examination is regularly held can be raised to a passing grade only by passing a satisfactory final examination in the course.

If a student who has received grade E in any course fails to raise it to a passing grade by the end of the next semester of his residence in which the course is regularly given, then the grade shall be changed to F. If in the meantime, however, the student has repeated the course and has again received grade E, his grade in the course will remain grade E, as it would be if he were taking the course for the first time. A student who fails to attain grade D or a higher grade in any course following a reëxamination for the purpose of raising grade E to a passing grade, will be recorded as having received grade F in the course.

A student who raises a grade E or F, incurred in an upper division or graduate course, to a passing grade by *successful repetition* of the course will receive the grade assigned by the instructor but ordinarily can not receive more than two grade points per unit. A student who raises a grade E, incurred in any course, lower division, upper division, or graduate, to a passing grade by *examination* or by performing other tasks required by the instructor, shall receive no grade points. However, the student may petition to have such grade points assigned as would have been assigned if the completion of the work had not been delayed. The petition must be endorsed by the instructor concerned, and must be submitted for final approval to the Dean of the College of Letters and Science (or to the Dean of the Graduate Division, in the case of graduate students).

Courses failed at this University and successfully repeated elsewhere are admissible for credit if the work was undertaken at a collegiate institution whose credits are acceptable for transfer to Santa Barbara. However, such repetition does not remove the failure grade from the University of California, Santa Barbara, record.

MINIMUM SCHOLARSHIP REQUIREMENTS

The following provisions apply to all undergraduate students at Santa Barbara:

Probation. A student will be placed on probation if at the close of any semester his

grade-point average is less than 2.0 (C average), computed on the total of all courses undertaken in this University for which he has received a final report.

Dismissal. A student shall be subject to dismissal from the University:

1. If during any semester he fails to obtain at least one and one-half times as many grade points as the total number of units in his program; *or*
2. If while on probation his grade-point average for the work undertaken during any semester falls below 2.0 (C average); *or*
3. If after two consecutive semesters on probation he has not attained a grade-point average of 2.0 (C average), computed on the total of all courses undertaken in this University for which he has received a final report.

A student who becomes subject to the provisions of these regulations on probation and dismissal shall be under such supervision as the Faculty of his school or college may determine. Consonant with these regulations, the Faculty, or persons designated by it, is authorized to dismiss from the University students under its supervision, or to specify the conditions under which such dismissal may be suspended, or permission granted for the return to the University of students who have been dismissed under these regulations.

LEAVES OF ABSENCE

Leaves of Absence from Classes, Examinations, and Final Examinations. A brief leave of absence from classes, or examinations, for a specified period of time may be issued by the personnel deans to a student who finds it necessary to be absent, or who has incurred such absence, *for reasons beyond his control.* No excuse for absence will relieve the student from the necessity of completing all the work of each course to the satisfaction of the instructor in charge. Forms may be obtained from the personnel deans.

Authorization for off-schedule final examinations will be granted only upon approval of a petition which is obtainable in the Registrar's Office.

COMPLETE WITHDRAWAL—HONORABLE DISMISSAL

An Official Withdrawal may, upon petition, be granted to any student provided he complies with the instructions on the appropriate petition form which is obtainable in the Office of the Registrar.

Discontinuance without Notice. A student who discontinues his work during a semester without formal withdrawal may have his registration privileges curtailed or entirely withdrawn. In order to withdraw from the University at any time during the semester without penalty, a student is required to submit a petition for honorable dismissal. Otherwise, the student will receive grade F in all courses in which he is enrolled for that semester.

READMISSION AFTER ABSENCE

All former students who wish to reenter the University of California, Santa Barbara, must file an application for readmission with the Registrar. Official transcripts of all work attempted in the interim must be submitted. Evidence of successful immunization against smallpox may be required. Final dates for filing for readmission are listed on pages 5 and 7.

STUDENTS' PROGRAMS

Average and Minimum Programs. An average program is 15 units of work per semester; however, a student who is physically impaired or not in good health may be

required to carry a reduced program. *A male student expecting deferment from military service should plan a program of at least 15 units of work each semester.*

Twelve units of work constitute a minimum program (except for special students and those who are engaged in directed teaching) and is the lowest limit permitted for those participating in student and intercollegiate activities.

Maximum Programs. Freshman students in regular status are limited to first-semester programs of 12–15 units. In special circumstances, however, the advisers of students may allow first-semester freshmen to carry a 17-unit program. After the first semester, regular students are allowed to carry a maximum program of 17½ units. Regular students who have earned a 3.0 average (B average) for each of the previous two semesters may carry a maximum program of 18½ units without petition. It is recommended that new transfer students carry less than 15 units their first semester in attendance at Santa Barbara.

Students who are classified as probational or special are allowed to carry a maximum program of 13½ units. The recommended study-list program for students who are physically handicapped or are employed part time is 13½ units. With the exceptions noted above, permission to carry a program of more than the maximum, or fewer than the minimum, usually allowed for the student's official classification must be obtained by petition to the academic dean. The petition must be signed by the departmental adviser and the appropriate academic dean. Petitions of this type should be filed on or before Friday of the third week of instruction.

Extension Credit toward Graduation. Units received in University of California Extension courses prefixed by X, XB, XD, XL, XR, XSB, or in extension courses acceptable for transfer to the University of California from other universities, may be counted toward graduation. Such courses taken while the student is regularly enrolled at Santa Barbara must be (1) included in the student's program, (2) counted as a part of the student's course load, and (3) approved by the student's adviser. The entire approved study list must be filed with the Registrar's Office *before the work is undertaken.* All students must petition for authorization to take such extension and correspondence courses. Forms may be obtained at the Registrar's information window.

Program Changes. After a student has filed his packet with the Registrar, changes may be made only upon petition. The approval of the academic dean is necessary for students with excess or deficit programs, and for students with fewer than 30 units.

CHANGE OF MAJOR

A student who wishes to change his major must obtain approval from the chairman of his proposed major department and the dean of his college or school. Petitions for this purpose can be obtained from the Office of the Registrar.

It should be emphasized that a student's graduation may be considerably delayed if he changes his major after having completed a substantial portion of it.

Except in the case of closely related majors, no student is permitted to change his major after the opening of the final semester of his senior year.

CREDIT BY EXAMINATION

Credit by examination is given under certain prescribed conditions. The rules governing such examinations may be obtained from the Registrar.

FINAL EXAMINATIONS

Final examinations are obligatory in most undergraduate courses. Each course in which a final examination is not required is so indicated in the *Schedule of Classes* at the beginning of the semester in which the course is given. So far as practicable,

all examinations will be conducted in writing, and a maximum time will be assigned beforehand for each examination, which no student will be allowed to exceed. The time for examination sessions will not exceed three hours. Students should note that instructors are not authorized to change the dates of final examinations. This does not apply to petitions granted in accordance with the procedure laid down above under *Leave of Absence from Examinations.* There can be no individual exemption from a final examination except by approval upon petition. Department deviations from this rule are permitted in the case of Comprehensive Examinations.

Comprehensive Examinations. Any department may examine a student, at the end of the semester immediately preceding his graduation, in the major subject in which the department has given instruction; and a student so examined, may, at the discretion of the department, be excused from all final examinations in courses in the department of the major subject in which he has been enrolled during the semester. Credit value may be assigned to this general examination in the major subject.

TRANSCRIPT OF RECORD

Any student may obtain from the Registrar a photostatic transcript of his college record. A charge of $1 is made for each transcript.

Students who plan to seek employment following graduation, and especially those who intend to teach, should procure several transcripts of their records as evidence of attendance at Santa Barbara.

Application for a transcript of record should be made directly to the Registrar well in advance of the time when the record will be needed by the applicant.

PETITIONS

It is the student's responsibility to file appropriate petitions whenever he wishes to deviate from the usual pattern in regard to college attendance. Failure to do so may result in loss of credit and other privileges. The following matters require approval by petition prior to: (a) adding or dropping courses or changing sections, (b) taking an excess or deficit load, (c) taking upper division courses while a student with less than 55 units, (d) obtaining credit by extension or correspondence courses, (e) obtaining credit by examination, (f) waiver or substitution of graduation requirement, waiver or substitution in major requirement, (g) honorable dismissal-withdrawal from University, (h) taking off-schedule final examinations, (i) taking 199 courses, (j) repeating an upper division course, (k) reclassification of legal residence, (l) change of major, and (m) removal of E grade.

STUDENT CONDUCT

When a student enters the University, it is assumed by the University authorities that he has an earnest purpose and that his conduct will bear out this presumption. If, however, he should be guilty of behavior in the University or community which is prejudicial to the University or should neglect his academic duties, campus authorities will take such action as they deem appropriate. Students who fail to make proper use of the opportunites freely given to them by the University must expect to have their privileges curtailed or withdrawn.

The Judicial Committee of the Associated Students is concerned with means of promoting conduct appropriate to self-governing, responsible students and is empowered to recommend procedures and policies conducive to attaining this end. It welcomes participation by students. Most living groups have their own judicial committee which enacts certain penalties against members for infractions of residence regulations. The faculty as individuals, the Faculty Committee on Student Conduct,

and the Personnel Deans are responsible to the Chancellor and to the President of the University for administering penalties in instances when students disregard University regulations or civil laws.

Degrees of Discipline. There are seven degrees of discipline: warning, censure, informal probation, official censure, suspension, dismissal, and expulsion. Official censure involves suspension from extracurricular activities for a specific period of time. Suspension is exclusion from the University for a definite period. Dismissal is exclusion for an indefinite period, with the presumption that the student's connection with the University will be terminated. Expulsion is the most severe academic penalty, and is final exclusion of the student from the University.

The University considers the effect of these measures upon the personal welfare and education of the individual students involved, as well as upon the welfare of the student body as a whole.

STUDENT RESPONSIBILITY

Each student is responsible for compliance with the regulations printed in this catalogue and in the SCHEDULE OF CLASSES AND DIRECTORY, with official notices published in the campus student newspaper, with the notices posted on official bulletin boards. and with all regulations of the University and of the Associated Students.

Before registration is considered complete, each student must fill out a cumulative record folder for the Dean of Students' Office during registration week.

Notice of change of name and/or address must be reported to the Registrar's Office immediately after change.

Every student is required to satisfy the instructor in each of his courses that he is performing his work in a systematic manner.

A student may not receive grades, transcripts of records, teaching credentials, or diplomas until all of his University obligations have been met. He may not register at the beginning of any semester until past obligations have been cleared or officially extended by the Chancellor or one of the personnel deans. Failure to comply with University obligations may result in the lapse of his status.

Failure to keep appointments with administrators or University faculty members. whether made through notices in mail boxes, in the student newspaper, or on bulletin boards, will be regarded as a breach of student responsibility, and will subject the student to disciplinary action.

Students wishing to withdraw from a course or from the University should see page 46 for proper procedures.

It is the student's responsibility to secure the consent of the instructor whenever he or she enrolls in a course listing prerequisites which the student has not completed.

RESPONSIBILITY FOR STUDENT WORK

All material of whatever nature submitted by a student in satisfaction of all or any portion of a course requirement is the property of the University and is not subject to any claim on the part of the student who has submitted it.

Further, it is a condition of attendance for any student in any course that any material which he shall produce independently, and not as a part of any course requirement. must be removed by him from University premises not later than the last day of the semester in which he produced such material; and that if he shall fail to remove it as herein provided, there shall be no obligation on the part of the University to hold or safeguard it and all risks of its destruction, loss. or other disposition shall rest solely upon the student.

AUTHORITY OF INSTRUCTORS

No student will be permitted to enter upon the study of any subject if, in the opinion of the instructor, he lacks the necessary preparation to ensure competent work in the subject.

Any instructor, with the approval of the Committee on Student Conduct and the Chancellor, may exclude from his course a student guilty of unbecoming conduct toward the instructor or another member of the class, or a student who, in his judgment, has neglected the work of the course. A student thus excluded will be recorded as having failed in the course, unless the faculty determines otherwise.

Undergraduate Requirements and Curricula

COLLEGE OF LETTERS AND SCIENCE

The College of Letters and Science introduces students to the most basic and important fields of human intellectual and artistic achievement. Its curricula constitute basic preparation for the most significant roles in our society. All freshmen coming to Santa Barbara enroll for their first two years in this College, and most of them complete their college careers within it. The purpose of a liberal education is to provide the student with a broad understanding of his heritage in the humanities, the sciences, and the fine arts, and to give him the experience of studying deeply at least one of the disciplines dealing with these areas. The former is accomplished through the general education curriculum; the latter by the "majors" offered by the various academic departments.

The general education curriculum (see page 40) is designed to provide each student with a basic understanding of his own and at least one foreign language, to introduce him to philosophy, literature, and the fine arts, to give him an experience of history and the social sciences, to acquaint him with the methods and laboratory procedures of the natural sciences, and to contribute to his health and development by encouraging him to participate in one or more of a variety of sports and games.

After a semester's residence at UCSB a student of exceptional ability and performance who wishes to achieve the same objectives by courses better suited to his needs and attainments is invited to propose his own general education curriculum in consultation with his faculty adviser. If the adviser agrees to sponsor this program, he will submit it to the Dean of the College of Letters and Science for approval.

FRESHMAN PROGRAMS

In accordance with recommendations sent out by the departments offering majors and by the Faculty of the College of Letters and Science, entering freshmen are expected to take courses in English, physical education, foreign language (if continuing a language started in high school), and one or more courses selected from the humanities, and the biological, physical, and social sciences. It is not required that students take both science and foreign language their first semester.

Any student who expects eventually to obtain a teaching credential should consult with advisers in the office of the Department of Education as early as possible in his college career. See section covering Department of Education for requirements for the credential programs and supervised teaching.

Unless students must postpone taking English 1A because of having to take the course in Subject A, or unless at the time of entrance students have transfer credits which satisfy the English 1A–1B requirement, they must take English 1A and 1B during their first two semesters. Should any student fail either course, he must repeat it the next semester.

MAJOR FIELDS OF STUDY

The following majors are available in the College of Letters and Science: anthropology, art, art and home economics, biology, botany, chemistry, classics, drama, Asian studies, economics, education*, English, French, geology, German, Hispanic civilization, history, home economics, mathematics, music, philosophy, physical and

* With approval of School of Education.

health education, physical science, physics, political science, psychology, religious studies, Russian area studies, social science, sociology, Spanish, speech, tutorial program, zoology, and undeclared.

The student should choose his major field of study with great care. Personal preference, individual qualifications, and future ambitions should be carefully weighed. It should be kept in mind that a change of major after entering the upper division is likely to prove costly in both units and time.

Departmental and Faculty Advisers

After assignment to a department, each student will be referred to a member of the faculty who will serve as his faculty adviser. Undeclared majors are assigned an adviser by the College of Letters and Science. It is important for the student to keep in close touch with his adviser on all academic matters, including choice of courses, consideration of a major, and requirements for graduation. Appointments should be observed punctually, and it is always useful to consult this catalogue on any matter before going to the adviser for counsel.

GENERAL REQUIREMENTS

These are general requirements for all students. Students are advised that the major department may impose additional requirements for work in the various majors.

Unit and Grade-Point Requirements

A minimum of 120 semester units is required for graduation with a Bachelor of Arts degree. Also, a student's record must show twice as many grade points as there are units in the total credit value of all courses he has undertaken in the University of California. Moreover, *the student must maintain at least a C average in the field of study which constitutes a major or a minor,* and at least a C average in the upper division work taken in the major.

The attention of transfer students is directed to the fact that this minimum average must be maintained in the courses undertaken in the University of California. Half of the minimum number of units required for graduation will normally be completed in lower division status. No fewer than 40 units of the total requirements must be selected from upper division courses taken in upper division status.

Residence Requirement

Every candidate for a bachelor's degree is required to have been enrolled at the Santa Barbara campus during the senior or final year of residence. Twenty-four units must be completed while so enrolled. For this purpose, it is permissible to offer Summer Session work undertaken at Santa Barbara, but the student must complete at least one regular semester of his senior or final year in resident courses of instruction. Credit earned by special examinations taken at Santa Barbara does not meet this requirement.

For his protection the student, before enrolling in any course to be taken off campus during his senior year, should file a petition to enroll in that course.

Distribution of Units

The major is usually limited to 40 units. In addition to his major the student will complete the Program in General Education and will normally be able to choose certain elective courses to complete his required total number of units.

Lower Division

A student with fewer than 60 units is classified in the lower division. The emphasis in the lower division in all departments is upon general education rather than specialization.

Students without declared majors during the freshman year should follow the standard program advised for all freshmen (see page 51).

Upper Division

Students with 60 units or more are classified in the upper division, but any student with 55 or more units may register for upper division courses and receive upper division credit. In order to graduate, each student must have at least 40 upper division credits taken while he is an upper division student. No student with fewer than 55 units toward graduation may enroll in an upper division course without the permission of the Dean.

Units of Credit

Credit for academic work undertaken at the University is evaluated in terms of units. The value of a course is reckoned at the rate of 1 unit for three hours' work per week per semester on the part of the student. The credit value assigned to a course is not determined by the number of class meetings per week, but by the number of hours of work required of the student. For most courses, it is expected that the average student will spend two hours in preparation for one hour of lecture or recitation. A student who desires to make up any high school subject deficiency by offering work of college level can, in one University semester, earn credit equivalent to the credit of one year of work in high school.

SCHOOL OF ENGINEERING

In general a minimum of four years will be required to complete the requirements for the Bachelor Degree in Engineering. In some cases more time may be needed to complete the requirements specified in the curriculum. Completion of the four-year program should provide adequate background for the student to start his professional career or to enter graduate programs in engineering. The curricula provide for (1) the development of an understanding of the relationships between the basic principles of physics, mechanics and mathematics, and the fundamentals of the more advanced electrical engineering science, (2) a rigorous discipline in methods of analysis, involving the application of the foregoing sciences to the analysis and solution of engineering problems, (3) an introduction to fields of study outside of engineering to round out the intellectual development of the student.

ENGINEERING EXAMINATIONS

Students who plan to register in the School of Engineering at Santa Barbara are not required to take the Lower Division Engineering Qualifying Examination. (This examination is used at other campuses.) An applicant can, if he so desires, take the examination. However, it will not be used as a criterion of admission.

An Upper Division Qualifying Examination is required of all students who wish to enter the Upper Division. It is an achievement test that includes sections on English, mathematics, chemistry, physics, and lower division engineering subjects. The last day to file applications to take the examination is October 24, 1964 for admission to the spring semester, 1965 and March 20, 1965 for admission to the fall semester, 1965.

The examination will be given at various test sites throughout the state on November 7, 1964 and April 3, 1965. It should be taken the semester before the one in which

the applicant plans to register. Formal application for admission to the University as well as the application to take the test must be filed before the date scheduled for the examination.

The applicant for the Lower Division Engineering Examination is charged with a fee of $5 if the test is taken with a group of three or more persons, or at the regularly scheduled times and locations. A fee of $10 is charged for an individual test. A $5 fee is charged for the Upper Division Engineering Examination if taken with a group of three or more persons at the regularly scheduled times and locations; otherwise the fee is $10.

ADMISSION AS A FRESHMAN

The requirements for freshman admission include satisfaction of the general requirements for admission to the University.

To satisfy the *general requirements for admission to the University*, marks must average at least B grade in the following courses taken in tenth, eleventh, and twelfth grades: United States history, English, mathematics, science (with laboratory), foreign language.

Many patterns of high school subjects will satisfy these requirements. A pattern such as the following, which includes: algebra*, 2 units; plane geometry*, 1 unit; trigonometry*, ½ unit; physics or chemistry (preferably both), 1 or 2 units; and mechanical drawing, 1 unit, is strongly recommended for students who plan to study engineering at the University of California.

	High School Units
United States history	1
English	3
Algebra	2
Plane geometry	1
Trigonometry	½
Physics or chemistry (preferably both)	1
Foreign language	2
Mechanical drawing	1
Other college preparatory subjects	3½
	15

These subjects are prerequisite to the regular courses in the freshman engineering program and the student who is admitted without one or more of them will be obliged to defer the courses to which they are prerequisite, and thereby will become irregular and probably will be delayed in advancement to upper division status and in graduation.

Since engineering laboratory courses and engineering practice require dexterity in the use of measuring instruments, and in the operation and testing of machines and equipment, prospective students are advised to elect shop courses in high school, preferably machine shop, for at least one semester. Other skills, such as typing, are very desirable.

Professional engineering requires much oral and written communication. High school courses in English composition and public speaking contribute greatly to the foundation for college study of engineering.

* Or equivalent integrated courses, covering this same subject material, acceptable to the University's Office of Admissions.

Admission to the lower division of the School of Engineering does not necessarily imply advancement to the upper division at some later time. Advancement to the upper division is contingent upon the achievement of a satisfactory scholarship record in lower division courses, and a satisfactory score in the *Upper Division Engineering Examination.*

ADMISSION AS A JUNIOR

Admission to the upper division of the School of Engineering will be to the particular curriculum selected by the applicant, such as electrical, mechanical, or chemical engineering.

A sizable fraction of the University's upper division engineering students enter at the junior level from junior colleges or other institutions. Applicants for junior status from all sources, including applicants from the University's lower division, are required to meet the same minimum standard. The following requirements, which are precisely equivalent to those imposed upon continuing students, apply to admission of new juniors:

1. Satisfaction of the general requirements for admisison to the University at junior level. (See statement on Admission with Advanced Standing.)

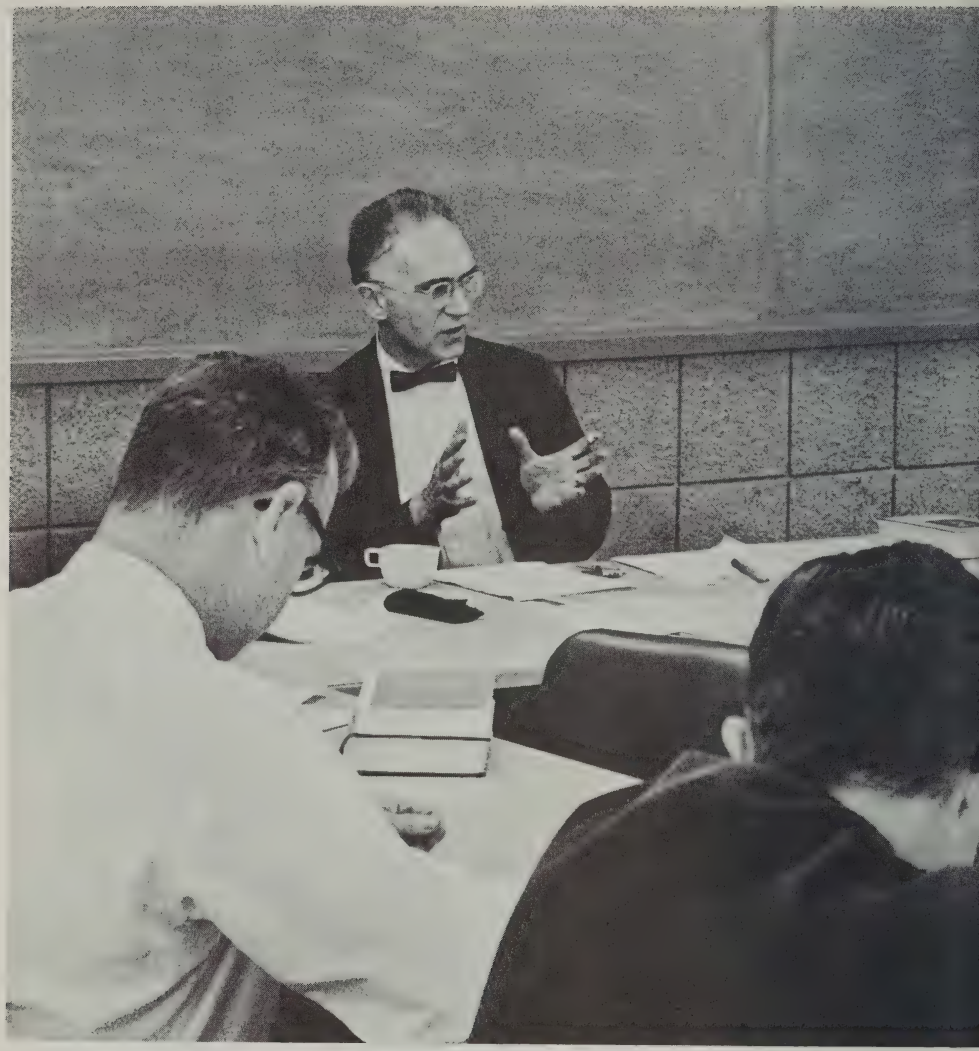
2. A satisfactory combined average based on the score in the Upper Division Engineering Examination and grades in science, mathematics, and engineering subjects undertaken in college.

3. The required grade-point average in a lower division program of not less than 60 units including partial completion of the Letters and Science General Education Program which is recommended for transfer students by the junior college or other institution attended and which also includes the following minimum subject requirements:

	Minimum Number of Units
Analytic geometry and calculus	12
Chemistry (for engineering and science students)	8
Physics (for engineering and science students)	10
Engineering (subject such as graphics, properties of materials, surveying, engineering measurements, statics or electronics)	10
Humanistic-social studies	6
Unspecified subjects (6 units may be in humanistic-social studies; none may be in Military Science or Physics Education; the remainder may be in additional mathematics, chemistry, physics, and engineering courses)	14
	60

The student admitted on this basis will not be required to take additional lower division courses in Engineering except those which are prerequisite to upper division courses in his curriculum.

The above subject requirements are minimum in Engineering. Students who enter with only 60 units will probably require more than four semesters to complete the General Education requirements of the College of Letters and Science and the upper division of the University's engineering curricula. The University will accept a maximum of 70 units of advanced standing credit for college courses completed at a junior college.



Graduate Seminar

Graduate Division

As a general campus of the University of California, Santa Barbara offers graduate programs leading to the degrees of Master of Arts, Doctor of Philosophy, and to various teaching credentials.

Applications for graduate standing will be received from graduates of recognized colleges and universities. The basis of selection will be promise of success in the proposed work, as judged largely by the previous college record. The student's undergraduate program must have been of such character as to furnish an adequate foundation for advanced academic study.

INFORMATION CONCERNING GRADUATE STUDY

All persons seeking graduate standing must apply to the office of the Dean of the Graduate Division. Each applicant must file two copies of a formal application and two official transcripts of his record from each college and university he has attended, not later than August 1 for the fall semester, and not later than December 1 for the ensuing spring semester. The application blanks may be obtained from the Graduate Division; University of California, Santa Barbara; Santa Barbara, California. The applications must be accompanied by a money order or bank draft for $5 in payment of the application fee. Payment should be made for the exact amount, and checks, drafts, or money orders should be made payable to The Regents of the University of California.

Approval of an application for graduate admission does not constitute a commitment on the part of the University to accept the applicant as a candidate for a degree or to recommend him for a credential. Certain requirements must be met while in graduate standing prior to a student's becoming formally a candidate for a degree or receiving the recommendation for a credential. Moreover, the University reserves the right to withhold or withdraw from any student the privilege of candidacy or of recommendation prior to the completion of requirements for a degree or credential.

A limited number of teaching assistantships are available. More specific information may be obtained from the chairman of the department of the subject in which the student wishes to teach.

Students admitted to graduate status will normally be enrolled in either or both of two programs: (1) that leading to a graduate degree, and (2) that leading to recommendations for the general secondary, junior college, or pupil personnel credentials. With good reason a student will be admitted to graduate status without degree or credential objectives and may enroll in those graduate courses to which the dean, with the concurrence of the instructor, will admit him.

Waiver of Nonresident Tuition Fee for Graduate Students. In exceptional cases, the tuition fee may be remitted, in whole or in part, for students in regular graduate status who have distinguished scholarship records and are carrying full programs of work toward higher degrees. Irrespective of how distinguished his scholarship may have been, a graduate student will not be exempted from payment of the tuition fee if he is carrying some lower division courses merely for his cultural advancement. Foreign students whose tuitions are paid by their governments are in no case eligible for remission of the nonresident fee.

The term *distinguished scholarship* in connection with the question of exemption from the payment of the tuition fee will be interpreted as follows: The scholarship standing must have been excellent throughout a period of no less than two years just preceding the time of application for this privilege. Moreover, only students from institutions of high standing in scholarly work will be considered. Only the decidedly

exceptional student will be eligible for privilege of exemption from the payment of tuition if he is a nonresident. Students exempted from the tuition fee pay only the incidental fee. Petitions for exemption from the nonresident tuition fee must be filed with the Dean of the Graduate Division *before registration*. The privilege of exemption from the nonresident tuition fee may be revoked at any time at the discretion of the Dean of the Graduate Division if in his judgment a student fails to maintain distinguished scholarship, or if he proves himself unworthy in other respects. Exemption will be granted for only one semester in advance.

Students seeking exemption from this fee will be required to file a separate petition for each semester that they are classified as nonresidents.

STUDY-LIST LIMITS

The maximum programs for which graduate students may register are given in the table below. Study lists exceeding these limits may be accepted only with the approval of the Dean of the Graduate Division.

FULL-TIME GRADUATE STUDENTS			TEACHING ASSISTANTS*			PERSONS EMPLOYED FULL TIME		
Graduate Units	Undergraduate Units	Total Units	Graduate Units	Undergraduate Units	Total Units	Graduate Units	Undergraduate Units	Total Units
0	16	16	0	12	12	0	6	6
1	15	16	1	11	12	1	5	6
2	13	15	2	9	11	2	4	6
3	12	15	3	8	11	3	3	6
4	11	15	4	7	11	4	2	6
5	9	14	5	5	10			
6	8	14	6	4	10			
7	7	14	7	3	10			
8	5	13	8	1	9			
9	4	13	9	0	9			
10	3	13						
11	1	12						
12	0	12						

*The minimum program a teaching or research assistant must register for, attend, and complete, is 6 units of upper division and/or graduate courses.

THE DEGREE OF MASTER OF ARTS

Majors are offered in biology, botany, chemistry, economics, education, English, French, geology, history, mathematics, applied mathematics, music, philosophy, physical education, physics, political science, psychology, sociology, Spanish, speech and drama, and zoology.

Applicants for the Master's Degree

A student may apply for graduate standing to seek the master's degree subject to the following regulations:

1. *Admission.* No student may be admitted to the program for the master's degree without the approval of the chairman of his department and the Dean of the Graduate Division.

2. *Preparation.* The student's baccalaureate training must be substantially equivalent, both as to the major and in general education, to that required by the University of California.

3. *Residence.* Students in master's programs will spend two semesters in residence on the Santa Barbara campus; at least one semester must fall within a regular session and will normally be composed predominantly of course work in the major, exclusive of thesis work. Waiver of residence requirements will be at the discretion of the Dean of the Graduate Division.

4. *Program.* The program of every student who is seeking the master's degree must be approved by his department. In Plan I (Thesis) at least 20 units (including no fewer than 8 graduate units) are required. In Plan II (Comprehensive Examination) 24 units (including no fewer than 12 graduate units) are required. Students seeking the master's degree may enroll in courses numbered 198 and 199, but may not utilize them to satisfy the requirements for this degree. Lower division courses are not applied toward an advanced degree. Further information regarding graduate course requirements may be obtained from the chairman of the department.

5. *Candidacy.* Admission to candidacy is *not automatic.* Approximately one semester prior to the completion of the requirements for the master's degree, an applicant for the degree must make formal petition for *advancement to candidacy.* Further details may be obtained from the Dean of the Graduate Division.

6. *Standards of Scholarship.* Only upper division and graduate courses in which the student is assigned grades A, B, or C may be counted in satisfaction of the requirements for the master's degree. Furthermore, the student must maintain *an average* of at least three grade points per unit in those courses during his residence at the University of California as a graduate student.

THE DEGREE OF DOCTOR OF PHILOSOPHY

The Doctor of Philosophy degree is offered in biology, chemistry, economics, English, history, mathematics, philosophy, physics, political science, and psychology. Doctoral programs in several additional fields are being prepared so that additions to the programs listed above may be initiated in the near future.

Applicants for the Doctor of Philosophy Degree

An applicant for graduate standing to seek the degree of Doctor of Philosophy is subject to the following regulations:

1. *Admission.* Admission to graduate standing in the master's degree program does not imply entrance to the doctoral program. A student will be accepted in the doctoral program only with the approval of his department chairman and of the Dean of the Graduate Division.

2. *Preparation.* In addition to the requirements for admission to graduate standing (as described above relative to the master's degree), the student's baccalaureate training must have fitted him for significant research in the subject of his specialty. Although the doctorate is a research degree, it is understood that his general education will have been substantially the equivalent of that required by the University of California and that his undergraduate major will largely have prepared him to meet the requirements of the comprehensive examination. If a student is admitted to the doctoral program with deficiencies in any of these requirements, he is expected to remove the deficiencies before advancement to candidacy.

3. *Residence.* Students in doctoral programs will spend four semesters in residence on the Santa Barbara campus; two consecutive semesters of residence must be completed in regular session prior to advancement to candidacy. Waiver of residence requirements will be at the discretion of the Dean of the Graduate Division.

4. *Program.* The doctorate is a research degree and is granted upon the recommendation of the student's dissertation committee after he has satisfied his examining

committee and been advanced to candidacy. It is not granted automatically upon the completion of any list of courses and residence requirements but rather reflects professional excellence as judged by his performance. The specific program by which the student will prepare himself for such performance is determined by his examination committee, normally under the chairmanship of his major professor. Each program will be designed to meet the individual needs of the student concerned.

5. *Candidacy.* Advancement to candidacy is earned by passing examinations in two modern foreign languages (usually German or Russian and French or Spanish) demonstrably useful in the literature of the student's special area of study followed by a comprehensive examination in his major subject. The comprehensive examination may be taken toward the end of the first year of residence. The student is required to file an application for advancement to candidacy.

6. *Standards of Scholarship.* The rules of scholarship described above under the Master's Degree apply also to students in the doctoral program.

For further details the student is referred to the chairman of the department of his major subject and to the ANNOUNCEMENT OF THE GRADUATE DIVISION, SANTA BARBARA.

CALIFORNIA TEACHING CREDENTIALS

The School of Education is authorized by the California State Department of Education to recommend applicants for certain teaching credentials. In keeping with recent legislation concerning teacher certification in California, all teaching credentials will require a year of graduate study. The only exceptions to this will be those students (certain seniors and postgraduate students) who are completing credentials which formerly were integrated in a four-year curriculum—namely, the kindergarten-primary, elementary, junior high, and the special secondary credentials.

Credential programs offered include standard teaching credentials with (1) specialization in elementary teaching, (2) specialization in secondary teaching, (3) specialization in junior college teaching, and (4) the standard designated services credential with specialization in pupil personnel services. In addition, the following program may be substituted for a minor applicable to standard teaching credentials: specialized preparation to serve as a teacher of exceptional children in the area of the speech and hearing handicapped.

Admission. A student applying for admission to a credential program must be approved by the department of his teaching major, the Department of Education, and the Dean of the Graduate Division.

Preparation. The student's baccalaureate training must be substantially the same as that required at Santa Barbara in the field of his teaching major. His undergraduate program must exhibit breadth in general education in such fields as the fine arts, languages and literature, the sciences, psychology, philosophy, and the social sciences. Deficiencies in general education, the major, or the minor must be removed prior to admission to student teaching.

Scholarship. Admission into the five-year elementary and secondary credential programs requires a 2.5 grade-point average for all upper division courses and a 2.75 grade-point average for upper division courses in the major. Admission requirements for the junior college and pupil personnel credential programs are the same as for admission into the master's degree programs. In applying these standards, the Dean of the Graduate Division may give some consideration to high scores attained on the achievement tests of a recognized national testing service.

Every student who has been admitted to either the elementary or the general secondary credential program must maintain an overall minimum grade-point average of 2.75 in all upper division and graduate courses; those admitted to the junior

college or pupil personnel services credential programs must maintain a grade-point average of 3.0 in all upper division and graduate courses. A student who fails to maintain these standards of scholarship is subject to dismissal from the credential program.

Residence. In completing his course work, the candidate must satisfy the two-semester residence requirement. One semester of study must be completed during the regular academic year.*

* The Graduate Council of UCSB on March 5, 1962 stated, "[the candidate] . . . will be required to spend one semester on full-time in residence on the Santa Barbara campus in a regular session during which his work will be composed predominantly of courses in the major, exclusive of thesis work. This requirement may also be met by two or more semesters on part-time aggregating the equivalent of one semester on full-time, all attended in regular sessions during which his work will be composed predominantly of courses in the major exclusive of thesis work."

Courses of Instruction 1964–1965

EXPLANATORY NOTE

The Semester Unit

A semester unit represents one full period of classwork per week with two hours outside preparation or, if a laboratory subject, three full periods a week, taken for the entire semester. In any laboratory course, three laboratory hours have the unit value of one lecture hour. The unit value of each course is indicated by a number in parentheses immediately following the title of the course. The name of the instructor reflects by whom the course is usually offered.

Roman Numeral and Letter Designations

The Roman numerals I and II and the letters Yr. are placed after the unit value of courses to show when they are usually offered: I, in the fall semester; II, in the spring semester; I, II, in both semesters; and Yr., continued through the fall and spring semesters.

Year Courses: Double Numbers

A course designated by a double number (for example, History 4A–4B) is continued through two successive semesters, ordinarily from September to June. The student should use the first number in registering for the course during its first semester, and the second number during its second semester. Generally the first half of such a course is prerequisite to the second half. A final report is made by the instructor at the end of each semester. The student may discontinue the course at the end of the first semester, with final credit for the first half of the course, except as otherwise noted. Course numbers followed by the letter "L" indicate a laboratory course. For example, Physics 128L identifies Modern Physics laboratory.

Classification and Numbering of Courses

Courses are classified and numbered as follows:

1. *Lower Division Courses* (numbered 1–49, or sometimes indicated by letters if in subjects usually given in high school). A lower division course is one open to freshmen or to sophomores and not counting as upper division work in any department.

2. *Upper Division Courses* (numbered 100–199). An upper division course in any department is one open only to students who have completed one or more lower division courses in that department, or is an elementary course in a subject of such difficulty as to require the maturity of upper division students.

Special courses in each department numbered 199, and entitled, for example, Independent Studies in Art, Independent Studies in Biological Sciences, are courses which present an opportunity for independent study on the part of well-prepared major and minor students *who have completed 85 or more units.* No more than six semester hours of 199 courses can be credited to a student, and the limit for one semester is 4 units.

3. *Graduate Courses* (numbered 200–299). A graduate course is one which is open normally only to students in graduate standing.

ANTHROPOLOGY

Charles J. Erasmus, Ph.D., *Associate Professor of Anthropology (Chairman of the Department).*
C. Loring Brace, Ph.D., *Assistant Professor of Anthropology.*
James J. F. Deetz, Ph.D., *Assistant Professor of Anthropology.*
Ben R. Finney, Ph.D., *Assistant Professor of Anthropology.*
*Roger C. Owen, PhD., *Assistant Professor of Anthropology.*

Frank Fernandez, M.A., *Acting Assistant Professor of Anthropology.*

THE MAJOR

Anthropology is the study of man in the broadest sense. It concerns itself with the biological, cultural, and historical aspects of mankind. The aim of the anthropology major is three-fold: (1) to prepare for graduate school, students desiring to work professionally in anthropology, (2) to prepare students for careers either in secondary education or in social service work not requiring graduate study, and (3) to provide a background in behavioral studies for students desiring a broad education in either the biological or the social sciences.

Requirements for the Major

Two emphases are recognized within the anthropology major: cultural anthropology and physical anthropology. (See below.) All majors expecting to go to graduate school will take comprehensive examinations in the final semester of the senior year.

Cultural Emphasis

Preparation for the major—Required: Anthropology 2 (or 101), 3, 5, Biology 20 (or 1 or 2).

The major—Twenty-four units of upper division Anthropology (except 101), six of which may be in related courses in other departments or subject fields, including the tutorial major, with the approval of the departmental adviser.

Physical Emphasis

Preparation for the major—Required (16 units in the lower division): Anthropology 2 (or 101), 3, 5, Zoology 25, 40. Recommended: French or German, Geography, History 17A–17B, Mathematics.

The major—Twenty-four units of upper division Anthropology (except 101), six of which may be in related courses in other departments or subject fields, including the tutorial major, with the approval of the departmental adviser. Required courses: Biology 130 (or 133), 131 (or 123).

Anthropology Minor

Required: Anthropology 2 (or 101) and 3 or 5 and a minimum of four upper division courses not to include 101, 198 or 199. The four upper division courses meeting the required minimum must be taken from four different staff members.

Teaching Credentials

Either a major or a minor in Anthropology may serve as an appropriate part of the program of studies required for an elementary, secondary, or junior college teaching credential in California. A student wishing to secure any of these credentials should confer with designated counselors in the Department of Anthropology and in the School of Education.

ANTHROPOLOGY

Lower Division Courses

2. Introductory Anthropology. (3) I, II. The Staff

The nature of culture: a survey of the range of cultural phenomena, including material culture, social organization, religion and other topics.

3. The Prehistory of Man. (3) I, II. Mr. Deetz

Human culture from man's emergence as a culture-bearing animal to the begining of written history in all parts of the world.

* Absent on leave, fall semester, 1964.

5. Introduction to Physical Anthropology. (3) I, II. Mr. Brace

Not open to students who have completed Anthropology 1.

Human evolution: evolutionary thought, origin and antiquity of the primates, fossil man, and living races.

Upper Division Courses

101. General Anthropology. (3) I, II. Mr. Deetz

Major principles and concepts of anthropology; may serve as prerequisite for upper division courses. Not open to students who have had Anthropology 2.

102. World Ethnology. (3) I. The Staff

A survey of representative primitive cultures of the world; comparative materials from modern culture; relationship of environment and culture.

105. American Indians North of Mexico. (3) II. Mr. Owen

The origins, development, and attainments of Indian cultures north of Mexico.

107. Peoples and Cultures of Latin America. (3) I. Mr. Erasmus

Aboriginal and peasant societies of Mexico, Central and South America and the methods and theories related to their comparison and classification.

110. Archaeology of the Old World. (3) I. Mr. Deetz

The development of culture in the Near East, Europe, Africa, and Asia from the Paleolithic to the Iron Age. Classical cultures will be treated only in outline, with greater stress on preliterate developments in all parts of the Old World.

113. Archaeology of the New World. (3) II. Mr. Deetz

A survey of New World archaeology with an emphasis on regional developments as they relate to each other and demonstrate continuity of cultural traditions over long time periods.

124. Primitive Religion. (3) I, II. Mr. Owen

Religious beliefs and practices among preliterate societies; the role of religion in society.

125. Comparative Society. (3) I. Mr. Owen

Prerequisite: Anthropology 2 or consent of instructor.

Comparative study of the structure, development, and function of human society; social, religious, political, and economic institutions.

130. Contemporary Peasant Societies. (3) II. Mr. Owen

Prerequisite: Anthropology 2, or Sociology 1, or permission of instructor.

Examination and analysis of peasant communities and societies of the modern world; relationships between peasant and urban social structures.

135. Peoples and Cultures of Asia. (3) II. The Staff

The aboriginal cultures of Asia, past and present.

139. Peoples and Cultures of Africa. (3) I. Mr. Brace

The aboriginal cultures and races of Africa, past and present.

142. Introduction to Indian Civilization. (3) I. Mr. Fernandez

Rise of Hindu civilization from prehistoric times to present. Examination of Hinduism, Buddhism, Islam as value systems integrating Indian life. Effects of British rule, modern changes.

143. Social Organization in India. (3) II. Mr. Fernandez

Regional divisions of India; family, kin, caste groups, and village life; forms of social organization above village level; urbanization and its effects on villages.

147. Peoples and Cultures of the Pacific. (3) I. The Staff

The aboriginal cultures of Australia, Malaysia, Melanesia, Polynesia, and Micronesia.

150A–150B. Physical Anthropology. (3–3) Yr. Mr. Brace

Prerequisite: Anthropology 5 or consent of the instructor.

150A. A general survey of human osteology and somatology in terms of evolutionary, racial, sexual, and age variations. Not open to students who have credit for Anthropology 150.

150B. A comparative study of living human populations examined in terms of functional adaptations.

151. The Fossil Evidence for Human Evolution. (3) II. Mr. Brace

Prerequisite: Anthropology 2, 3, 5, Biology 20, or Geology 3.

Presentation and discussion of the major pieces of the fossil evidence for human evolution. Various interpretations will be discussed in the light of evolutionary theory and with regard to the intellectual climate of opinion prevalent at times of formulation.

162. History of Anthropological Theory. (3) II. Mr. Erasmus

Prerequisite: Anthropology 2, 125, or consent of the instructor.

The history of the development of anthropology as a scientific discipline; a survey of anthropological schools of thought and theory.

165. Culture Change in Underdeveloped Societies. (3) II. Mr. Erasmus

Dynamics of technological and cultural change in the developing societies with consideration of technical aid, community development, land reform, and similar assistance programs.

170. Introduction to Structural Linguistics. (3) I. Mr. Fernandez

Beginning course in the analysis of phonological, morphological, and syntactic structures. Discussion of related topics: sociolinguistics, psycholinguistics, semantics.

171. Introduction to Comparative and Historical Linguistics. (3) II.
Mr. Fernandez

Prerequisite: Anthropology 170 or consent of instructor.

Emphasis on language as a diachronic system, introduction to comparative analysis and historical reconstruction. Linguistic change: phonological and morphological. Language classification, language families of the world, lexicostatistic dating.

189. Advanced Anthropology. (3–5) II.
Mr. Erasmus

Prerequisite: senior standing in anthropology or sociology.

This is an advanced survey of anthropology which will vary in its orientation with the interests of the enrolled students. It is intended for anthropology majors and as a preparation for beginning graduate work.

195. Introduction to Archaeology. (3) II.
Mr. Deetz

Prerequisite: Anthropology 2 or 5. Limited to 20 students.

Important archaeological discoveries throughout the world; methods and techniques of modern archaeology; archaeology as a natural and a social science.

197. Advanced Field Training in Archaeology. (4–6) Summers. Mr. Deetz

Prerequisite: Anthropology 195 or consent of instructor.

The technique of archaeological field methods. Involves the mapping and excavation of an archaeological site; processing and preparation of archaeological specimens, photography, recording and cataloguing of artifacts.

198. Readings in Anthropology. (1–3) I, II.
The Staff

This course may be taken for no more than two semesters and for a maximum of three units each semester.

199. Independent Studies in Anthropology. (1–4) I, II. The Staff

Prerequisite: admission by permission only.

Education Abroad Courses

Padua Center

See section on Education Abroad Program for detailed course descriptions.

PC 103A–103B. Prehistorical Civilizations. (5–5).

ART

Kurt Baer, Ph.D., *Professor of Art.*
William E. Dole, M.A., *Professor of Art.*
Catherine C. Campbell, M.A., *Associate Professor of Art.*
*Mario A. Del Chiaro, Ph.D., *Associate Professor of Art.*
Howard C. Fenton, M.A., *Associate Professor of Art.*
***David S. Gebhard, Ph.D., *Associate Professor of Art, Director of Art Gallery.*
Jacob Lindberg-Hansen, M.A., *Associate Professor of Art.*
Alfred K. Moir, Ph.D., *Associate Professor of Art (Chairman of the Department).*
William A. Rohrbach, M.A., *Associate Professor of Art.*
**Robert C. Thomas, M.F.A., *Associate Professor of Art.*
Howard Warshaw, *Associate Professor of Art.*
Ruth M. Ellison, M.A., *Associate Professor of Art, Emeritus.*
Suzanne C. Edwards, Ph.D., *Assistant Professor of Art.*
Irma C. Kachadoorian, *Assistant Professor of Art.*
Donald R. Lent, M.F.A., *Assistant Professor of Art.*
Bruce S. McCurdy, M.F.A., *Assistant Professor of Art.*
Conway Pierson, M.F.A., *Assistant Professor of Art.*
William R. Ptaszynski, *Assistant Professor of Art.*

Darvey E. Carlsen, Ed.D., *Lecturer in Art.*
Corlette B. Walker, M.A., *Associate in Art.*

THE MAJOR

The Art Department is in no sense a professional school. Its program leads to a B.A. degree. The program includes courses in the history of art and in the studio. It is designed primarily to serve three purposes: to provide the undergraduate with a thorough and comprehensive basic training in art as a humanistic activity; to provide students who wish to become practicing artists with the foundations which will prepare them for graduate work and professional schools; and to offer basic training to students who look forward to graduate training as professional historians of art or critics.

The major in art requires the completion of the general education requirements. It requires in addition certain basic lower division courses as prerequisites to more advanced work. It permits students to take majors with an emphasis in painting, in sculpture, in printmaking, or in the history of art.

All art majors are required to take History 4A–4B (European History); it is also recommended that they take Philosophy 136 (Aesthetics).

In studio classes, the department requires three hours of work each week for each unit.

The Department of Art reserves the privilege of retaining student work for exhibition purposes.

Requirements for Art Majors

Painting Emphasis

Preparation for the major—Required (17 units in the lower division): Art 2, 4, 8, 20A–20B, 38, 40, 42.

The major—twenty-six units in the upper division with 6 units in art history including 112C, and 120A–120B, 128, 182A, and 8 units from 142, plus 4 units of electives.

Sculpture Emphasis

Preparation for the major—Required (17 units in the lower division): Art 2, 4, 8, 20A–20B, 38, 39, 42.

The major—twenty-six units in the upper division with 6 units in art history including 113, and 175, 120A–120B, and 8 units from 160, 161, plus 4 units of electives.

* Absent on leave, 1964–65.
** Absent on leave, fall 1964.
*** Absent on leave, spring 1965.

History Emphasis

Preparation for the major—Required (13 units in the lower division): Art 2, 4, 8, 20A–20B, 40.

The major—twenty-six units in the upper division art history including 104A, 105A, 108A, 112A–112B, and 14 units in art history electives (102–117).

Printmaking Emphasis

Preparatiaon for the major—Required (17 units in the lower division): Art 2, 4, 8, 20A–20B, 28, 38, 40 or 42.

The major—twenty-six units in the upper division with 6 units in art history including 112C, and 120A–120B, 182A–182B, and 8 units from 128, plus 4 units of electives.

Art Minor

Requirements for the Minor. Satisfactory completion of the following 20 units: Art 1, 4, or 8, 20A–20B, 31, 42, plus 8 units of upper division art electives.

Teaching Credentials

The pattern of courses listed below is recommended only for students who will complete requirements for a teaching credential by the end of the spring semester 1965. All other students should consult assigned advisers in the Art Department and in the School of Education relative to recommended courses which will apply toward credential requirements.

The General Secondary Credential, Teaching Major. The candidate must complete a major in art and also the following courses: Art 39, 170A–170B, and 4 units of student teaching, Education A 192A–192B.

The General Secondary Credential, Teaching Minor. Satisfactory completion of the following 22 units: Art 1, 4 or 8, 20A–20B, 31, 39 or 175 or 182A, 42, 142, 170A, Education SA 190, A 192A, plus 2 units upper division art history.

Further requirements for credential candidates are described in the listings of the Department of Education.

ART

Lower Division Courses

1. The Understanding of Art. (2) I, II. The Staff

An appreciation of the art expressions of various cultures.

2. Introduction to Art. (3) I, II. Mr. Lindberg-Hansen

For Art majors only.

Two hours of lecture: an appreciation of architecture, painting, sculpture, and crafts, introducing the viewpoint of the art historian. Three hours of studio laboratory. The media and techniques of the above noted arts, demonstration and practice.

4. History of Ancient Art. (2) I, II. Mr. Del Chiaro

Primarily for majors.

From the Stone Age to the Renaissance.

8. History of Modern Art. (2) I, II. Mr. Moir

Primarily for majors. Prerequisite: Art 4, or consent of instructor.

Renaissance through modern art.

20A. Drawing. (2) I, II. Mr. Dole

Drawing in various media including the use of the human figure, anatomy.

20B. Drawing. (2) I, II. Mr. Warshaw

Prerequisite: Art 20A.

Drawing in various media including the use of the human figure, anatomy.

28. Printmaking. (2) I, II. Mr. McCurdy

Prerequisite: Art 20A–20B, or concurrently.

Laboratory and seminars. A survey of Relief and Intaglio printmaking techniques.

31. Design and Color. (2) I, II. Mr. Ptaszynski

Analysis of and practice in principles of elementary composition.

38. Sculpture. (2) I, II. Mr. Thomas

Prerequisite: Art 20A.

Sculptural problems; modeling and casting.

39. Ceramics. (2) I, II. Mr. Pierson

Historical fundamentals and techniques of ceramics.

40. Painting Methods and Materials. (2) I, II. Mr. Dole

Prerequisite: Art 20A–20B.

A historical and technical study of the materials of painting and the relation of technique to style. Lecture and studio.

42. Painting. (2) I, II. Mr. Fenton
Prerequisite: Art 20A–20B.
Composition in color; water-color media.

Upper Division Courses

102. Oriental Art. (2) II. Mr. Fenton
The architecture, sculpture, and painting of India, China, and Japan.

103. Prehistoric and Primitive Arts. (2) I. Mr. Fenton
The art expressions of African, Oceanic, and prehistoric European cultures.

104A. The Art of Ancient Egypt and Asia Minor. (2) I. Mr. Del Chiaro
Recommended preparation: Art 4.
The architecture, sculpture and painting of Ancient Egypt and Asia Minor (Turkey).

***104B. The Art of Ancient Mesoptoamia and Iran.** (2) II. Mr. Del Chiaro
Recommended preparation: Art 4.
The architecture, sculpture and painting of Ancient Mesopotamia, Iran and Phoenicia.

105A. The Art of Greece. (2) I. Mr. Del Chiaro
Recommended preparation: Art 4.
The architecture, sculpture, and painting of Crete and Greece from prehistoric times to the beginning of the Classical period (Mycenaean, Geometric and Archaic periods).

105B. The Art of Greece. (2) II. Mr. Del Chiaro
Recommended preparation: Art 4.
The architecture, sculpture, and painting of Greece from the Classical period through the Hellenistic Age.

105C. The Art of Etruria and Rome. (2) II Mr. Del Chiaro
Recommended preparation: Art 4.
The architecture, sculpture and painting of Ancient Etruria and Rome.

107A. Medieval Art. (2) I. Miss Edwards
Architecture, sculpture, and painting: Early Christian, Byzantine, and Pre-Romanesque.

107B. Medieval Art. (2) II. Miss Edwards
Architecture, sculpture, and painting: Romanesque and Gothic.

108A. Italian Renaissance Art. (2) I. ———
Florentine Art of the 15th century.

108B. Italian Renaissance Art. (2) II. ———
The Art of the Venetian School; the High Renaissance; and Mannerism.

108C. Northern Renaissance Art. (2) I. ———
Architecture, sculpture, and painting of the Renaissance in Germany, Flanders, France, and England.

***109A. Baroque Art.** (2) I. Mr. Moir
Architecture, sculpture, and painting in Italy and Spain: seventeenth and early eighteenth centuries.

***109B. Baroque Art.** (2) II. Mr. Moir
Architecture, sculpture, and painting in Flanders, Holland, and France: seventeenth and early eighteenth centuries.

110. Eighteenth Century Painting. (2) I. Mr. Moir
Painting of the late Baroque and Neoclassic periods.

111. Painting in the Nineteenth Century. (2) I. Mr. Moir
Artists and the cultural backgrounds from neoclassicism to the twentieth century.

112A–112B. Comparative Studies in Contemporary Art. (3–3) I, II. Mr. Baer
Prerequisite: Art 1.
An analysis of concepts and trends in architecture, sculpture, painting, music and theater during the twentieth century.

112C. Twentieth Century Painting. (2) II. Mr. Gebhard
Expressionism, Abstraction, Surrealism and related movements in twentieth century painting.

113. History of Sculpture. (2) II. Mr. Lindberg-Hansen
Major periods of sculpture from ancient times to the present.

114. History of Architecture. (2) I. Mr. Gebhard
A survey of the development of architectural style from the earliest times to the present. Emphasis on European and American architecture.

115A. Spanish Art. (3) I. Mr. Baer
The architecture, sculpture, and painting of Spain and Portugal from classical times to the present.

115B. The Arts of Hispanic America. (3) II. Mr. Baer
The architecture, sculpture, painting and crafts from Pre-Columbian times to the present.

117. The Art of the United States. (2) II. Mr. Gebhard
Architecture, sculpture, and painting in the United States from Colonial times to the present.

120A. Advanced Drawing. (2) I, II Mr. Rohrbach
Prerequisite: Art 20A–20B.
Drawing in various media including the use of the human figure, anatomy.

120B. Advanced Drawing. (2) I, II. Mr. Warshaw
Prerequisite: Art 20A–20B, 120A.
Drawing in various media including the use of the human figure, anatomy.

128. Advanced Printmaking. (2) I, II. Mr. McCurdy
Prerequisite: Art 20A–20B, 28, and 40 or 42.
Original print design and method; may be repeated for credit, limted to 8 units.

* Not to be given, 1964–65.

142. Advanced Painting. (2) I, II.
Mr. Dole, Mr. Fenton, Mr. Rohrbach, Mr. Warshaw
Prerequisite: Art 20A–20B, 40, 42.
Painting problems in various media; may be repeated for credit, limited to 8 units.

160. Advanced Sculpture. (2) I, II.
Mr. Thomas
Prerequisite: Art 20A–20B, 38.
Sculptural problems in various techniques. May be repeated for credit, limited to 8 units.

161. Wood Sculpture. (2) II.
Mr. Lindberg-Hansen
Prerequisite: Art 20A–20B, 38.
Composition in relief and in the round.

170A–170B. Design in Materials. (2–2) I, II.
Mr. Pierson
Prerequisite: Art 31, Art 20A.
Design and experiment in various materials.

175. The Art of Pottery and Ceramic Sculpture. (2) I, II. Mr. Pierson
Prerequisite: Art 39 or consent of the instructor.
Creative design, construction, glazing, and firing. May be repeated for credit, limited to 8 units.

182A–182B. Creative Photography. (2–2) I, II. Mr. Rohrbach
Prerequisite: Art 2, 20A, 120A, 128A.
Field, laboratory, seminars: exploring photography as artistic expression and its relationship to other art media.

194A–194B. Group Studies in Art. (2–2) I, II.
The Staff
Prerequisite: qualified upper division students and consent of instructor.
Special group studies in art problems.

195. Art for Elmentary Schools. (2) I, II.
Mrs. Campbell
Art techniques, laboratory practices, observations. For non-art majors.

199. Independent Studies in Art. (1–4) I, II.
The Staff
Advanced individual problems.

Related Courses in Another Department

Education SA 190. Teaching Procedures in Art. (2) I, II. Mrs. Campbell

Education A 192A–192B. Student Teaching: Art. (2–2) I, II. Mrs. Campbell

Education Abroad Courses

Padua Center

See section on Education Abroad Program for detailed course descriptions.

PC 108A–108B. Italian Renaissance Art. (4–4)

ART AND HOME ECONOMICS

Staff members in the Departments of Art and Home Economics appropriately service this major.

The major is restricted to students who have specific interests in and potential talents for the stated fields. Entrance into the major is subject to the approval of the Dean. The major gives appropriate emphasis to general education; it does not prepare for teaching. An adviser will be designated by the Dean.

The program in general education must be completed by all majors.

Preparation for the Major

Forty-four units required in lower division as follows: *Art 1, 4, 8, 20A–20B, 31, 42. Biology 20, Chemistry 20 or 40 or 101, Chemistry 21 or 41 or Physics 21, History 4A–4B, Home Economics 9, 10, 13, 15, 20, 25.

The Major

Eight units required in upper division art courses including *Art 170A. Ten units required in upper division Home Economics courses including Home Economcis 105 and 141. Recommended: Home Economics 140.

The remaining units for the degree may be general electives of which there must be sufficient upper division courses to fulfill the 40-unit upper division requirement for graduation.

* Art courses may not be used to fulfill general education humanities requirement.

ASIAN STUDIES

Committee in Charge

D. Mackenzie Brown, Ph.D., *Professor of South Asian Studies (Chairman of the Committee).*
Herbert Fingarette, Ph.D., *Professor of Philosophy.*
Howard Fenton, M.A., *Associate Professor of Art.*
Immanuel C. Y. Hsu, Ph.D., *Associate Professor of History.*

The major in Asian Studies is an interdepartmental major designed for students planning graduate study or professional careers in this area. Emphasis is placed upon the cultural background rather than upon technical training. The major is therefore intended also to serve the needs of students desiring a general education with emphasis upon this important cultural area of the world. These Asian studies include South Asia, with emphasis upon India, Pakistan, and Ceylon; and the Far East, with emphasis upon China, Japan, Korea, and the Pacific.

Preparation for the Major

Fifteen units in the lower division: Chinese 1, 2, 3 and History 19. With the approval of the Committee Chairman, an appropriate course sequence may be substituted for Chinese 1, 2, 3. Additional 6 units in the lower division selected from: Anthropology 2, 3, 5, Economics 1A–1B, History 4A–4B, Political Science 45, Sociology 1 and Geography 2.

The program of courses is to be made out by the student in consultation with the committee in charge. Each program will be designed to meet the needs of the individual student in accord with his educational objectives.

The Major

Twenty-seven units of upper division courses must be selected from the following list (descriptions of these courses may be found under appropriate departmental headings): Anthropology 135, 147, Art 102, Asian Studies 187, Chinese 110A–110B, History 184, 185, 186A–186B, 195J, Philosophy 123, Political Science 136, 137, 187, Religious Studies 155, 160, 165.

Asian Studies Minor

The student will take 12 instead of 27 units in the upper division courses listed above.

Teaching Credentials

A major in Asian Studies may serve as an appropriate part of the program of studies required for a standard elementary teaching credential in California. A student who wishes to participate in this program should confer with designated counselors in Asian Studies and in the School of Education.

Only single-subject minors are applicable toward teaching credentials under the California Education Code. Therefore, the minor in Asian Studies may not count toward credentialing requirements.

ASIAN STUDIES

Upper Division Course

187. Asian Thought. (3) I. Mr. Brown
The social, religious, and cultural concepts of the Far East (Confucianism, Taoism, Shinto) and South Asia (Hinduism, Buddhism, Jainism). Their effects upon individuals and institutions.

BIOLOGICAL SCIENCES

Thomas C. Bruice, Ph.D., *Professor of Biochemistry.*
Vernon I. Cheadle, Ph.D., *Professor of Botany.*
John E. Cushing, Ph.D., *Professor of Immunology.*
**Demorest Davenport, Ph.D., *Professor of Zoology (Chairman of the Department).*
Barbara B. DeWolfe, Ph.D., *Professor of Zoology.*
**Mary M. Erickson, Ph.D., *Professor of Zoology.*
Katherine Esau, Ph.D., *Professor of Botany.*
*Garrett J. Hardin, Ph.D., *Professor of Biology.*
Maynard F. Moseley, Ph.D., *Professor of Botany.*
Cornelius H. Muller, Ph.D., *Professor of Botany.*
Elmer R. Noble, Ph.D., *Professor of Zoology.*
Harrington Wells, M.A., *Professor of Biology, Emeritus.*
James F. Case, Ph.D., *Associate Professor of Zoology.*
Joseph H. Connell, Ph.D., *Associate Professor of Zoology.*
Helen E. Keener, Ph.D., *Associate Professor of Biology.*
Philip C. Laris, Ph.D., *Associate Professor of Biology.*
Walter H. Muller, Ph.D., *Associate Professor of Botany.*
Henry I. Nakada. Ph.D., *Associate Professor of Biochemistry.*
Dale M. Smith, Ph.D., *Associate Professor of Botany.*
Edward L. Triplett, Ph.D., *Associate Professor of Biology.*
James L. Walters, Ph.D., *Associate Professor of Biology.*
Alfred W. Ebeling, Ph.D., *Assistant Professor of Zoology.*
*John R. Haller, Ph.D., *Assistant Professor of Botany.*
Michael Neushul, Jr., Ph.D., *Assistant Professor of Botany.*
Eduardo Orias, Ph.D., *Assistant Professor of Biology.*
William K. Purves, Ph.D., *Assistant Professor of Botany.*
F. James Rohlf, Ph.D., *Assistant Professor of Biology.*
*Adrian M. Wenner, Ph.D., *Assistant Professor of Biology.*

<>

Steven M. Horvath, Ph.D., *Professor of Physiology.*
Theodore K. Gartner, B.S., *Acting Assistant Professor of Biology.*
Arthur D. Bissell, M.D., *Lecturer in Biology.*
William Theobald, *Lecturer in Botany.*
Marta S. Walters, Ph.D., *Research Associate in Biology.*

BASIC PREPARATION FOR THE MAJORS

All students, regardless of the major which they intend to choose, must complete the common "core" of introductory courses outlined below. By the time of pre-counselling for the junior year, each student is expected to select one of the four upper division majors described below, and indicate his choice of an upper division counsellor from a list provided by the department. Required (37–39 units in the lower division): Biology 1, 2, Chemistry 1A–1B, 40 and 42 or 112A–112B, Mathematics 3A–3B, or 3A and 30, or 30 and 32, Physics 2, 3, or 7, 8, 8L.

There is no required sequence of courses other than the prerequisite of Chemistry 1A–1B for Biology 1. Chemistry 1A–1B, therefore, should be taken in the freshman year.

Students with a weak mathematics background should make up this deficiency by completing Mathematics C and D by correspondence through the University Extension, preferably during the summer preceding enrollment in the University.

Biology 20 or Botany 20 may be substituted for Biology 1 either by receiving a grade of A in either course or passing a written final examination for Biology 1.

Further specific requirements or recommendations concerning the lower division program are presented under the several upper division majors described below.

* Absent on leave, fall 1964.
** Absent on leave, spring 1965.

COMMON REQUIREMENTS FOR ALL MAJORS

As a requirement for graduation, each student will be required to take at least one course listed below from Section A, at least one course from Section B, and at least two courses in separate areas from among Sections C, D, and E. Substitutions in a student's upper division program in the major may be made only with the approval of the Chairman of the Department.

The five areas and elective courses within each follow:

Section	*Pertinent Courses*
A. Genetics	Biology 130.
B. Physiology	Biology 101; Botany 107, 128; Zoology 109, 142.
C. Development	Botany 116; Zoology 100.
D. Ecology	Botany 140, 141; Zoology 113A and 113B, 140.
E.Diversity of Form and Structure	Biology 104; Botany 3 (no upper division credit), 105, 106, 109, 110, 151; Zoology 104, 105, 106, 111, 112.

Specific courses to fulfill the requirements above and/or additional requirements follow under the various upper division majors.

SPECIAL REQUIREMENTS FOR UPPER DIVISION MAJORS

Botany Major

Primarily designed to provide an understanding of plant structure and development, diversity, evolutionary relationships, functional systems, and environmental relationships.

Specific Requirements

Lower Division Course: Botany 3 (should be taken in the Lower Division).

Twenty-four upper division units including a course in each of the following: plant taxonomy or plant morphology, plant physiology, genetics, plant ecology, and plant anatomy. The remaining units should be taken in the biological sciences. At least one upper division course in zoology is strongly recommended.

Cellular Biology Major

Primarily designed to prepare students interested in gaining an understanding of the cellular and molecular mechanisms underlying the properties of living systems, as approached by the overlapping disciplines of biochemistry, biophysics, cytology, embryology, genetics, microbiology, and physiology.

Specific Requirements

Lower Division Courses: Mathematics 3A–3B; Physics 7, 8, 8L (Physics 9, 9L is recommended); Chemistry 5.

Twenty-four upper division units, including the area requirements.

Upper Division Courses: Biology 101, Chemistry 112A, 112B, 140A and 140B.

Recommended Courses: Biology 108A–108B, Chemistry 183.

Environmental Biology Major

Designed to provide the student with an understanding of the relationships of plants and animals with their physical environment and with each other, as shown at the individual, population, species, or community level, and approached through the inter-related disciplines of behavior, ecology, morphology, systematics, and evolution. The location of the campus on the seashore and the close proximity of mountains and desert provide an unusual variety of marine, freshwater, and terrestrial habitats in which to work.

Specific Requirements

Lower Division Course: Botany 3.

Two courses in Physical Geography, Geology, or Oceanography, either lower or upper division, to be determined in consultation with the student's counsellor. A course in statistics, either lower or upper division (Biology 136 is recommended). Upper division units in these areas are accepted in the upper division unit requirement for the major.

Upper Division Courses: 24 upper division units in Biological Sciences which shall include at least 6 units each from Botany and Zoology and at least one course from each of the five categories (a–e) listed below.

a. Genetics: Biology 130
b. Physiology: Botany 107; Zoology 109, 142
c. Ecology: Botany 140, 141; Zoology 140
d. Natural History: Zoology 104, 112, 113A, 113B, 128 and 128L
e. Systematics and Evolution: Biology 131; Botany 109, 151, 152; Zoology 105, 160.

Zoology Major

Primarily designed for those interested in animal form, function, and environmental relationships.

Specific Requirements

Lower Division Courses: as outlined above.

Upper Division Courses: a minimum of 24 upper division units are to be distributed among courses chosen with the permission of the student's counsellor from those listed above as pertinent courses in the upper division areas. Students with a primary interest in animal physiology are urged to take Biology 108A–108B.

Recent Curriculum Changes

Because of the recent revision of the curriculum of the Department of Biological Sciences, embodied in this catalogue, students who matriculated at this campus prior to the fall of 1964 may experience difficulties in the interpretation of course prerequisites or in equating present courses with those of previous catalogues. These students should seek the assistance of a faculty counsellor.

Requirement for the Minor in Biology

All students electing a minor in the biological sciences are required to present for graduation 20 units of which at least eight must be upper division units. The following courses are required. Biology 1 (note prerequisite of Chemistry 1A–1B); Biology 2 is recommended.

One course from the following: Biology 130, 101, Botany 107, 128, 116, Zoology 109, 100, 142. One course from the following: Biology 104, Botany 3, 105, 106, 109, 110, 140, 141, 151, Zoology 104, 105, 106, 111, 112, 113A, 113B, 140.

Pre-Professional Programs

Pre-professional programs leading to subsequent study in agriculture, dentistry, forestry, laboratory technology, medicine, nursing, and similar professions are highly variable depending (a) upon the field, and (b) upon the professional training institution to be attended. The student should become familiar with the requirements of several institutions offering work in his specialty before discussing his program with his counsellor.

THE MASTER OF ARTS DEGREE

1. For the general University requirements, see The Graduate Program.

2. A candidate for the Master's degree may elect Botany, Cellular Biology, Environmental Biology, or Zoology as a major (see the fields of emphasis listed below under the requirements for the Ph.D. degree) and must have to his credit, in addition to the general University

requirements, the minimum lower and upper division requirements or their equivalents for the departmental major in the field of emphasis chosen. Students with minor deficiencies in these requirements will normally be allowed to complete them while in graduate status.

3. A reading knowledge of a modern foreign language.

4. Twenty semester units of courses, at least eight of which must be in the "200" series.

5. Each candidate must complete a master's dissertation under the general supervision of a committee.

THE DOCTORAL PROGRAM

1. For the general University requirements, see The Graduate Program.

2. Prospective candidates for the degree of Doctor of Philosophy in Biology normally must have the Bachelor's degree in one of the biological sciences from this University, or from an institution of equivalent standing and with a preparation deemed equivalent to that required for the Bachelor's degree from this University. The student who is admitted to graduate standing with deficiencies in preparation will be required to take appropriate undergraduate courses. If a student has completed a major in a subject other than the biological sciences he is advised to consult with the department chairman.

3. The candidate must either (1) elect one of the fields of emphasis listed below, or (2) submit an alternative program for approval by the faculty in Biology. Fields of emphasis: Animal Behavior, Biochemistry, Ecology (animal and plant), Embryology, Genetics, Immunology, Morphology, Parasitology, Physiology (animal and plant), Plant Taxonomy, Biosystematics.

4. A reading knowledge of German and French or Russian is required. In special research areas exceptions may be made for the second language.

5. Each prospective candidate is required to take a qualifying examination.

6. Each candidate must complete a doctoral dissertation under the general supervision of a committee. A final oral examination is given on the dissertation and its implications.

Teaching Credentials

General Secondary Credential, Teaching Major

The pattern of courses listed in the 1963–1964 *General Catalogue* is open only to students who will complete requirements for a teaching credential by the end of the spring semester 1965. All other students should consult assigned advisers in the Biological Sciences Department and in the School of Education relative to recommended courses which will apply toward credential requirements.

General Secondary Credential, Teaching Minor

The requirements for the general secondary credential teaching minor are the same as those listed under "Requirements for the Minor in Biology." It should be noted, however, that those entering the program leading to any of the new Standard Teaching Credentials are subject to the California Certification Requirements effective January 1, 1964. Only single subject minors are applicable to such credentials.

BIOLOGY

Lower Division Courses

1. Principles of Biology. (5) I. The Staff
Lecture, four hours; laboratory, three hours. Prerequisite: Chemistry 1A and 1B.
An introduction to experimental biology, with emphasis on mechanisms of physiological, ecological, and genetic systems common to plants, animals, and microörganisms.

2. Biological Diversity. (5) II. The Staff
Lecture, three hours; laboratory, six hours.
An introduction to the major groups of plants, animals, and microörganisms, with emphasis on structure, life histories, phylogeny, and evolution.

20. Concepts of Biology. (4) I, II. The Staff
Lecture, three hours; laboratory, three hours.
Unifying principles of biology; cell structure, functions, and energy relations; cybernetics, natural selection, evolution; reproduction and the principles of genetics and development; nature and growth of populations. Not ordinarily open to majors in the Department of Biological Sciences for credit.

30. Field Biology. (4) II. Miss Erickson
Lecture, two hours; field trips, six hours.
A study of plants and animals in the field, with emphasis on biological principles and recognition of species.

Upper Division Courses

101. Cell Physiology. (4) II. Mr. Laris
Lecture, three hours; laboratory, three hours. Prerequisite: Biology 1 (or equivalent); and Chemistry 1A–1B and 40, 40L.
Structure and function on cellular and subcellular levels of organization.

104. Microbiology. (4) I. Mr. Cushing
Lecture, two hours; laboratory, six hours. Prerequisite: Biology 1 and 2 and 1 year of college chemistry.
Introduction to microbiology. Emphasis on the physiological approach to an understanding of the activities of microörganisms in biological, medical, and nutritional problems.

107. Cytology and Cytogenetics. (4) I. Mr. Walters
Lecture, three hours; laboratory, three hours. Prerequisite: a general course in biological science, and Biology 130 (may be taken concurrently), or consent of the instructor.
Fundamentals of cellular structure and function, with special emphasis on the chromosomes, cell division, and the interrelations of cytology with genetics and evolution.

108A–108B. Biochemistry. (4–4) Yr. Mr. Nakada
Lecture, three hours; laboratory, three hours. Prerequisite: Chemistry 40, 40L or 112A–112B and one laboratory course in Biology.
The chemistry and dynamic aspects of the metabolism of biologically important compounds. Stress as general biochemistry with examples from animals, plants, and microörganisms.

123. Human Ecology. (3) I, II. Mr. Hardin
Lecture, three hours. Prerequisite: Biology 1, or Biology 20, or Botany 20, or equivalent.
Man's place in nature. Cycles of substances in nature, energy sources, population growth and the conservation of air and water; ecology of diseases; radiation dangers; natural selection and evolution.

127. Principles of Immunology. (3) I. Mr. Cushing
Lecture, two hours; laboratory, three hours. Prerequisite: organic chemistry (may be taken concurrently) and a year's course in the biological sciences or equivalent.
The principles of immunology are treated as basic biological phenomena. Relationships to medicine, biochemistry, genetics, embryology, and evolution.

130. General Genetics. (4) I, II. Mr. Gartner, Mr. Orias
Lecture, three hours; discussion, one hour. Prerequisite: Biology 1 and 2.
An introduction to the mechanisms which govern the transmission and translation of the hereditary information, as derived from studies of man, other animals, plants and microörganisms.

130L. Genetics Laboratory. (2) II. Mr. Orias
Laboratory, six hours. Prerequisite: Biology 130 (may be taken concurrently).
An introduction to the experimental analysis of the mechanisms of heredity.

131. Evolution. (3) I, II. Mr. Hardin
Lecture, three hours. Prerequisite: Biology 130, or consent of instructor.
Organic evolution, with critical discussion of possible mechanisms involved.

133. Principles of Human Genetics. (3) II. Mr. Walters
Lecture, three hours. Prerequisite: Biology 20 or equivalent and consent of instructor.
Basic processes of heredity in man and their application to such matters as the heredity-environment problem, population genetics, heredity counseling, medico-legal problems, selection and evolution.

136. Biometry. (4) I. Mr. Rohlf
Lecture, three hours; laboratory, three hours. Prerequisite: Mathematics 3A or 32, or consent of instructor.
Statistical methods in biology. Includes descriptive statistics, frequency distributions, statistical inference, analysis of variance, correlation, regression, and non-parametric methods. Special emphasis is placed on their interpretation, correct application and efficient computation.

***150. Marine Biology.** (3) I. ———
Lecture, two hours; laboratory or field, three hours. Prerequisite: a course in the biological sciences.
Marine organisms and their relation to the environment; significance of this to man.

180. Public Health. (3) I. Mrs. Keener
Lecture, three hours. Prerequisite: a course in biological sciences.
Ecologic principles of health; the causes of physical and mental diseases, communicable and organic; biologic, social, and economic factors in prevention; administrative organizations and historical background.

194. Group Studies for Advanced Students. (1) I, II. The Staff
Oral reports by students; one discussion period. Prerequisite: consent of the instructor.
A critical review of research in selected fields of biology. Subject matter for the seminars will be selected from the following: A. Genetics; B. Behavior; C. Systematics; D. Ecology; E. Embryology; F. Physiology and Biochemistry; G. Reptilian Ecology; H. Immunology; I. Parasitology; J. Microbial Genetics; K. Biometry. May be repeated for a maximum of four units.

***195A–195B. Development of Biological Ideas.** (1–1) I, II. Mr. Hardin
Prerequisite: upper division standing in the department and consent of the instructor.
Reading of biographies and classical original papers in biology, followed by individual reports and class discussion.

198A–B–C. Readings in Biological Sciences. (1–1–1) I, II. The Staff
Individual conferences one hour once every two weeks. Prerequisite: senior standing with a major in biological sciences and consent of the instructor.
Special readings designed to broaden the outlook of students and to knit into a cohesive whole the basic principles underlying the major disciplines in the field.

* Not to be given, 1964–65.

199. Independent Studies in the Biological Sciences. (1–4) I, II. The Staff
Hours and credit by arrangement with any member of the staff. Laboratory or field. Prerequisite: senior standing with a major in biological sciences.

Graduate Courses

201. Neurophysiology. (3) I. Mr. Case
Lecture, two hours; laboratory, three hours. Prerequisite: a course in cellular or animal physiology.
The properties of nerve, neural systems and sense organs as illustrated with invertebrate material.

206. Bacterial Cell Organization and Regulation. (3) I. Mr. Gartner
Lecture, three hours. Prerequisite: Biology 104 and Biology 130 and Biology 108A–108B, or consent of the instructor.
Growth; influence of environmental factors on growth; cell organization and regulation.

208. Enzymology. (3) I. Mr. Nakada
Lecture, three hours. Prerequisite: Biology 108A–108B.
General properties of enzymes—including the mechanism of action, kinetics, energetics and properties of enzymes, coenzymes and multienzyme systems.

210. Cell Heredity. (3) II. Mr. Orias
Lecture, three hours. Prerequisite: Biology 130 and one semester of Biochemistry, or consent of the instructor.
The cellular and molecular mechanisms underlying the transmission and regulated expression of genetic determinants, with emphasis upon studies of microörganisms.

212. Population Genetics. (3) II. Mr. Rohlf
Lecture, three hours. Prerequisite: Biology 130, Biology 136 and Mathematics 3A or equivalent.
Discussion of evolutionary dynamics in terms of changes in gene frequency. Statistical study of the consequences of Mendelian principles in populations.

215. Comparative Biochemistry. (2) II. Mr. Nakada
Lecture, two hours. Prerequisite: Biology 108A–108B.
A study of the biochemical diversities that distinguish living species within the framework of the biochemical unities of life.

218. Advanced Immunology. (2) II. Mr. Cushing
Lecture, two hours. Prerequisite: Biology 127, a course in elementary genetics, or consent of the instructor.
Advanced consideration of selected topics in immunology.

294. Group Studies. (1) I, II. The Staff
A critical review of research in selected fields of biology. Subject matter for the seminars will be selected from the following: A. Genetics; B. Behavior; C. Systematics; D. Ecology; E. Embryology; F. Physiology and Biochemistry; G. Reptilian Ecology; H. Immunology; I. Parasitology; J. Microbial Genetics; K. Biometry. May be repeated for a maximum of 6 units.

298. Special Studies. (1–4) I, II. The Staff

299. Research in the Biological Sciences. (1–6) I, II. The Staff

BOTANY

Lower Division Courses

3. Field Botany. (4) II. Mr. Haller
Lecture, two hours; laboratory or field, six hours.
An introduction to the plants of the region, with emphasis on the common families, species, and the communities which they compose.

20. General Botany. (4) I, II. Mr. W. Muller
Lecture, three hours; laboratory or field, three hours.
Fundamentals of plant science; the relation of plants to man. Not ordinarily open to majors in the Department of Biological Sciences for credit.

Upper Division Courses

***104. Plants and Man.** (3) II. The Staff
Lecture, three hours. Prerequisite: Botany 20 or Biology 1.
A course designed to emphasize the influence of plants upon man, food plants, food chains, population problems; ethnobotany; origins of economic plants, and man's influence upon plant migrations.

***105. Morphology of the Nonvascular Plants.** (4) II. Mr. Neushul
(To be given in alternate years.)
Lecture, two hours; laboratory or field, six hours. Prerequisite: Biology 1 and 2, or consent of the instructor.
An advanced study of the structure, life cycles, and evolutionary relationships of the algae, fungi, mosses, and liverworts.

106. Morphology of the Vascular Plants. (4) II. Mr. Moseley
(To be given in alternate years.)
Lecture, two hours; laboratory or field, six hours. Prerequisite: Biology 1 and 2, or consent of the instructor.
An advanced study of the structure, life cycles, comparative anatomical features, and evolutionary relationships of the psilopsids, club mosses, horsetails, ferns, gymnosperms, and angiosperms.

107. Introduction to Plant Physiology. (4) II. Mr. W. Muller
Lecture, two hours; laboratory, six hours. Prerequisite: Biology 1 and 2, Chemistry 40, 42, or equivalent, or consent of the instructor.
Functions of higher plants: photosynthesis, assimilation, plant nutrition, water relations, and hormones.

109. Algology. (3) I. Mr. Neushul
(To be given in alternate years.)
Lecture, two hours; laboratory, four hours. Prerequisite: Biology 1 and 2.
Classification of marine and freshwater algae to be emphasized, but ecological and physiological aspects to be considered.

* Not to be given, 1964–65.

116. Plant Anatomy. (4) I. Mr. Moseley
Lecture, two hours; laboratory, six hours. Prerequisite: Biology 1 and 2, or consent of the instructor.
An introduction to the anatomy of vascular plants. Fundamental descriptive, developmental, and comparative aspects of anatomy.

128. Plant Metabolism. (3) I. Mr. Purves
Lecture, three hours. Prerequisite: Botany 107 or Biology 101, and Chemistry 40, 42, or consent of the instructor.
Metabolic pathways, trapping and utilization of energy, chemical and physical regulatory systems.

129. Experiments in Plant Metabolism. (2) II. Mr. Purves
Laboratory, six hours. Prerequisite: Botany 128 and consent of the instructor. (May be taken concurrently.)
Laboratory techniques in plant metabolism.

140. Principles of Bio-Ecology. (3) I. Mr. C. Muller
Lecture, two hours; laboratory or field, three hours. Prerequisite: Biology 1 and 2, one other laboratory course in botany or zoology, and consent of the instructor.
The ecology of plant and animal individuals, species, and communities, with emphasis upon habitat analysis and responses.

141. Ecology of Biotic Communities. (3) II. Mr. C. Muller
Lecture, two hours; laboratory or field, three hours. Prerequisite: Biology 1 and 2, one other laboratory course in botany or zoology, and consent of the instructor.
The theories of community origin, structure, and function and the geographic basis of community distribution.

151. Taxonomy of Flowering Plants. (3) I. Mr. Haller
Lecture, one hour; laboratory or field, six hours. Prerequisite: Biology 1 and 2 and Botany 3, or consent of the instructor.
Field and herbarium studies of flowering plants; the characteristics and relationships of plant families; the history, principles and methods of plant classification.

152. Experimental Taxonomy. (3) II. Mr. Haller
Lecture, one hour; laboratory or field, six hours. Prerequisite: consent of the instructor. Recommended: Botany 3, Botany 151, and Biology 130.
Discussion and field studies of variation, hybridization and evolution in natural populations of higher plants; the relation of these phenomena to taxonomic practice.

ZOOLOGY

Lower Division Courses

25. Human Anatomy. (4) I. Dr. Bissell
Lecture, two hours; laboratory, six hours.
The structure of the organ systems based on human material and dissection of the cat.

40. Human Physiology. (3) I, II. Mrs. Keener
Lecture, two hours; laboratory, three hours. Prerequisite: Biology 1 or Biology 20, and Chemistry 20 or Physics 20.
An introduction to human physiology, with emphasis upon the muscular and nervous systems.

Upper Division Courses

100. Introductory Embryology. (4) I. Mr. Triplett
Lecture, three hours; laboratory, three hours. Prerequisite: Biology 1 and 2.
Principles of development. Laboratory emphasis on experimental procedures in developmental biology with some attention to developmental anatomy.

104. Entomology. (4) II. Mr. Wenner
Lecture, two hours; laboratory or field, six hours. Prerequisite: Biology 1 and 2.
An introduction to the study of insects, their classification, structure, physiology, and ecology.

105. Ichthyology. (4) I. Mr. Ebeling
Lecture, three hours; laboratory, three hours. Prerequisite: Biology 1 and 2.
The biology of fishes, with emphasis on systematics, morphology, and natural history.

106. Comparative Anatomy of Vertebrates. (4) I. Mrs. DeWolfe
Lecture, two hours; laboratory, six hours. One field trip. Prerequisite: Biology 1 and 2.
The evolution and ramification of vertebrate structure, with emphasis upon function. Laboratory is limited to comparative morphology, but lectures stress physiology of the chief environmental adaptations.

109. Comparative Vertebrate Physiology. (4) I. The Staff
Lecture, three hours; laboratory, three hours. Prerequisite: Biology 1 (or equivalent), and Chemistry 1A, 1B.
A survey of the physiology of organ systems of the vertebrates with emphasis on mechanisms of control.

111. General Parasitology. (4) I. Mr. Noble
Lecture, two hours; laboratory, six hours. Prerequisite: Biology 1 and 2.
Biological aspects of parasitism: animal parasites of man and of other animals.

112. Invertebrate Zoology. (4) I. Mr. Davenport
Lecture, two hours; laboratory or field, six hours. Prerequisite: Biology 1 and 2.
An introduction to the classification, structure, habits, and ecology of invertebrate animals, with emphasis on the marine fauna of the Santa Barbara area.

113A. Natural History of Vertebrates. (3) I. Miss Erickson
Lecture, three hours; one field trip. Prerequisite: a laboratory course in biological sciences.
The interrelations of land vertebrates with their environment; behavior, annual cycles, population dynamics, and the bearing of these on distribution and evolution.

113B. Field Course in Vertebrate Zoology. (3) II. Miss Erickson

Lecture, one hour; field trips, six hours.

Identification of mammals, birds, reptiles, and amphibians; methods of studying behavior, and habitat relations; systematics.

128. Vertebrate Physiological Cycles. (2) I. Mrs. DeWolfe

Lecture, two hours. Prerequisite: Biology 1 and 2, and Zoology 109, passed or taken concurrently.

The physiological concomitants of annual cycles in vertebrates and environmental factors of dynamic importance. Analysis of seasonal changes in the endocrine and reproductive systems of representative native fishes, amphibians, reptiles, birds and mammals.

128L. Laboratory in Vertebrate Physiological Cycles. (1) II. Mrs. DeWolfe

Laboratory, three hours. Prerequisite: Zoology 128 or consent of instructor.

Introduction to techniques for analyzing seasonal physiological cycles in representative local native vertebrates. Quantitative determinations of changes in structure and function of organs involved in reproduction. Analysis of molt and fat cycles.

140. Animal Ecology. (4) II. Mr. Connell

Lecture, two hours; laboratory or field, six hours. Prerequisite: Biology 1 and 2.

The relation of animals to their physical and biological environment. Emphasis to be placed on the processes affecting the stability and fluctuations in populations and communities of animals.

142. Comparative Invertebrate Physiology. (4) II. Mr. Case

Lecture, two hours; laboratory, six hours. Prerequisite: Zoology 112, Chemistry 1A–1B.

A comparison of the physiology of the organ systems of the invertebrate phyla.

160. Systematic Zoology. (2) I. The Staff

Lecture, two hours. Prerequisite: one of the following: Zoology 104, 112, 113B, Botany 3, 151, or the consent of the instructor.

Taxonomic procedures, including concepts of speciation, biometry, bibliographic methods, and the rules of nomenclature.

Graduate Course

203. Advanced Embryology. (4) II. Mr. Triplett

Lecture, two hours; laboratory, six hours. Prerequisite: Biology 130; Zoology 100; one of the following: Biology 101, Zoology 109, Biology 108A or Botany 128; and consent of the instructor.

A rigorous analysis of developmental mechanisms including growth, the differentiation of cells and the organization of cell populations. Laboratory emphasis on modern procedures in the study of development.

Related Courses in Other Departments

Colloquium 102. The Concept of Evolution: Scientific, Social, and Philosophical Implications. (3) I, II. Mr. Girvetz, Mr. Hardin, Mr. Walters

Education SB 190. Teaching Procedures in the Biological Sciences. (2) I, II. ———

***Education SC 190. Natural Science in the Elementary School.** (3) I, II. ———

Education SB 192A–192B. Student Teaching: Biological Sciences. (2–2) I, II. ———

Philosophy 100. Science, Folklore, and Philosophy. (3) I. Mr. Girvetz

Philosophy 124. Philosophy of Science. (3) I or II. ———

Physics 124L. Nuclear Physics Laboratory. (1) I. Mr. Barrett

Education Abroad Courses

Goettingen Center

See section on Education Abroad Program for detailed course descriptions.

GC 101A–101B. Physiological Chemistry. (5–4)

GC 105A–105B. General Microbiology. (6–5)

GC 105A(L)–105B(L). Microbiology Laboratory. (2–2)

GC 136A–136B. Statistics for Biologists, Psychologists and Medical Students. (4–3)

* Not to be given, 1964–65.

CHEMISTRY

Ernest L. Bickerdike, Ph.D., *Professor of Chemistry.*
Clifford A. Bunton, Ph.D., *Professor of Chemistry.*
Glenn H. Miller, Ph.D., *Professor of Chemistry.*
Pierce W. Selwood, Ph.D., *Professor of Chemistry.*
Frederick T. Wall, Ph.D., *Professor of Chemistry (Chairman of the Department).*
Hazel W. Severy, M.A., D.Sci.O., *Professor of Chemistry, Emeritus.*
Robert H. DeWolfe, Ph.D., *Associate Professor of Chemistry.*
*Glyn O. Pritchard, Ph.D., *Associate Professor of Chemistry.*
Domenick J. Bertelli, Ph.D., *Assistant Professor of Chemistry.*
William C. Kaska, Ph.D., *Assistant Professor of Chemistry.*
Henry W. Offen, Ph.D., *Assistant Professor of Chemistry.*
Bruce F. Rickborn, Ph.D., *Assistant Professor of Chemistry.*

<>

Thomas C. Bruice, Ph.D., *Professor of Biochemistry (in the Department of Biological Sciences).*
Curtis B. Anderson, Ph.D., *Acting Assistant Professor of Chemistry.*
John A. Faust, Ph.D., *Lecturer in Chemistry.*
James A. Funkhouser, Ph.D., *Lecturer in Chemistry.*
Andrew Recsei, Ph.D., *Lecturer in Chemistry.*

The program leading to the bachelor's degree in chemistry meets the standards recommended by the American Chemical Society for professional training in chemistry. High school students should note that the preparation for this degree is simplified if their high school programs include chemistry, four years of mathematics, and courses in either German or Russian.

Counseling

Each entering student will be assigned an adviser who may be consulted on any matter pertaining to the student's University work. The adviser must approve the student's program each semester.

Preparation for the Major

Required (40 units in the lower division): Chemistry 1A–1B, 5, German or Russian, Mathematics 3A–3B, 4A, Physics 7, 8, 8L, 4C or 9, 9L. Recommended: Mathematics 119A for 3 units.

The Major

Twenty-eight units required in upper division courses including the following: Chemistry 112A–112B, 125, 140A–140B, 142 and an additional 8 units from the following (one course involving laboratory work in organic chemistry must be included): Chemistry 113, 139, 160, 181, 183, 185, 195, 197, 199.

The Minor

Twenty units are required; 6 must be upper division. Chemistry 1A–1B, 5, 112A–112B.

THE MASTER OF ARTS DEGREE

In conjunction with the general university requirements governing the work for the Master of Arts, the following are specific requirements for the degree in chemistry.

Each student shall take courses, including research, comprising 20 units of graduate work in chemistry, plus such undergraduate courses as shall be determined by the adviser on the basis of examinations. In addition, candidates must demonstrate a reading knowledge of

* Absent on leave 1964–65.

German, French, or Russian, and present a thesis. Unit distribution of courses will be approximately as follows: 6 units of graduate courses (200 series), two units of seminar courses (200 series), and 12 units of research courses (200 series).

THE DOCTORAL PROGRAM

1. For the general university requirements, see The Graduate Program.

2. An applicant for admission must present a Bachelor's degree in chemistry (or its equivalent), with a superior scholarship record. He must also meet the minimum requirements as given in the latest Graduate Division Announcement, University of California, Santa Barbara.

3. The student must demonstrate a reading knowledge of the scientific literature in German and either French or Russian.

4. The fields of emphasis are in Physical, Organic and Inorganic-Analytical Chemistry. Research problems in these fields will be determined by the current research interests of the individual staff members.

5. On entrance, each student will be required to take an examination in each of the fields: physical, organic and inorganic-analytical chemistry. The purpose of these examinations will be the detection of any existing deficiencies in the student's background, and the results will be used to determine which individual remedial courses are necessary.

6. In addition to the required research, Chemistry 299, and two semesters of seminar, Chemistry 260, it is recommended that each student take six graduate-level courses.

7. Advancement to candidacy is dependent upon:

(a) Cumulative Examinations. These will consist of a series of one-hour written examinations given at approximately six-week intervals (six examinations per academic year) in each of the three major areas of concentration. The student must begin to take the examinations in his major field as soon as any prior deficiency in this field has been remedied. The first three examinations taken will count if passed, but will not be considered if failed. A total of at least two of the first nine examinations must be passed; if not, the student will be dropped from the Ph.D. program. As a requirement for advancement to candidacy, five out of a maximum of fifteen examinations must be passed. The student may miss one examination per academic year without penalty.

(b) Preliminary Oral Examination. Upon completion of the requisite number of cumulative examinations and fulfillment of the language requirement, the student must pass an oral examination before his thesis committee.

8. The student must submit a dissertation, in standard university format, which must be found acceptable by the student's doctoral committee. Upon acceptance of the dissertation, a final oral examination, mainly a defense of the student's original work, must be passed.

Teaching Credentials

Either a major or a minor in chemistry may serve as an appropriate part of the program of studies required for an elementary, secondary, or junior college teaching credential in California. A student wishing to secure any of these credentials should confer with designated counselors in the Department of Chemistry and in the School of Education.

Candidates who elect chemistry as their teaching major must complete the major as specified. Students interested in chemistry as a teaching minor should confer with the department chairman.

CHEMISTRY

Lower Division Courses

1A–1B. General Chemistry. (4–4) Yr. The Staff

Lecture, three hours; laboratory, three hours. For students training for the scientific professions.

Chemical principles; chemical calculations; descriptive inorganic chemistry; qualitative analysis.

5. Quantitative Analysis and Chemical Equilibrium. (4) I. Mr. Bickerdike

Lecture, two hours; laboratory, six hours. Prerequisite: Chemistry 1B.

Theory and technique of analytical chemistry, emphasizing the application of chemical equilibrium.

20. Introductory Chemistry. (3) I, II. The Staff

Lecture, three hours.

General Education course in theoretical and descriptive inorganic chemistry. Not for science majors or for students who have received a grade of C or better in high school chemistry.

20L. Laboratory in Introductory Chemistry. (1) I, II. The Staff

Laboratory, three hours.

Experiments selected to best illustrate the nature of chemistry and the methods of chemical discovery. To be taken concurrently with or following Chemistry 20. Not for science majors.

40. Fundamentals of Organic Chemistry. (3) I, II. The Staff

Lecture, three hours.

General Education course in basic organic chemistry: chemical bonding, fats, carbohydrates, proteins, drugs, dyes and plastics; their reactions and applications. Recommended course for students with high school chemistry background. Not for physical science majors.

40L. Laboratory in Organic Chemistry. (1) I, II. The Staff

Laboratory, three hours. To be taken concurrently with or after Chemistry 40.

Laboratory experience in preparation and properties of organic compounds. Not for physical science majors.

42. Methods of Organic Chemistry. (3) II. The Staff

Lecture, one hour; laboratory, six hours. Prerequisite: Chemistry 40.

Intended primarily for pre-medical, pre-dental, and home economics students. Not open to students who have credit for Chemistry 40L. Lecture on synthetic organic chemistry and laboratory manipulations. Laboratory devoted principally to synthesis, partly to analysis.

Upper Division Courses

***101. Chemistry in the Modern World.** (3) I, II. Mr. Miller and Staff

Lecture, three hours.

Selected topics in the fields of inorganic, organic, and biochemistry. Designed for the non-major student with special emphasis on the important aspects of modern chemistry.

112A–112B. Organic Chemistry. (4–4) Yr. Mr. Bertelli, Mr. DeWolfe, Mr. Rickborn

Lecture, three hours; laboratory, three hours. Prerequisite: Chemistry 1A–1B, or consent of instructor. Primarily for majors in physical and biological sciences.

Carbon compounds; the aliphatic, aromatic, and heterocyclic series. The laboratory work consists of the preparation and study of the properties of typical members of each series.

***113. Analytical Microchemistry.** (2) II. Mr. Bickerdike

Laboratory, six hours. Prerequisite: Chemistry 5.

Chemical microscopy; classical and instrumental analytical techniques on the semi-micro and micro scales.

125. Instrumental Methods. (4) II. Mr. Offen

Lecture, two hours; laboratory, six hours. Prerequisite: Chemistry 5, 140A–140B.

Theoretical foundations of instrumental techniques, and their application to analytical problems. Laboratory experience with selected optical electro-analytical procedures including spectrometry, polarography, potentiometry, and gas chromatography.

***139. Organic Preparations.** (3) I. Mr. Bertelli, Mr. DeWolfe, Mr. Rickborn

Lecture, one hour; laboratory, six hours.

Selected laboratory syntheses using modern reactions and techniques. Study of such topics as the Grignard, enolate, and Diels-Alder syntheses.

140A–140B. Physical Chemistry. (3–3) Yr. Mr. Miller, Mr. Pritchard

Lecture, three hours. Prerequisite: Chemistry 5, Mathematics 4A, Physics 7.

Physiochemical behavior of substances; elementary thermodynamics; electrochemistry; chemical kinetics; atomic structure.

140L. Physical Chemistry Laboratory. (2) II. Mr. Miller, Mr. Pritchard

Laboratory, six hours. Prerequisite: Chemistry 140A–140B (may be taken concurrently).

The application of physical methods to chemical investigation.

160. Advanced Inorganic Chemistry. (3) I, II. Mr. Bickerdike, Mr. Selwood

Lecture, three hours. Prerequisite: Chemistry 5.

Atomic structure; chemical bonding; nuclear reactions; the less common elements.

181. Advanced Physical Chemistry. (3) I, II. Mr. Miller, Mr. Offen, Mr. Pritchard

Lecture, three hours. Prerequisite: Chemistry 140B with a grade of C or better.

Selected topics in modern physical chemistry.

183. Theoretical Organic Chemistry. (3) II. Mr. Bertelli, Mr. Bunton, Mr. DeWolfe, Mr. Rickborn

Lecture, three hours. Prerequisite: Chemistry 112A–112B, or consent of the instructor, Chemistry 40, 40L.

Mechanisms of organic reactions; relationship of structure to physical and chemical properties of organic compounds.

185. Organic Analytical Chemistry. (3) I. Mr. Bertelli, Mr. DeWolfe, Mr. Rickborn

Lecture, one hour; laboratory, six hours. Prerequisite: Chemistry 112A–112B.

Qualitative analysis of pure compounds and of mixtures; discussion of qualitative and quantitative methods.

195. Special Studies. (1–4) I, II. The Staff

To be taken with the consent of the chairman of the department as a means of meeting special curricular problems.

* Not to be given, 1964–65.

197. Senior Honors Research. (1–4) I, II. The Staff

Prerequisite: senior status; an average of grade B or higher in chemistry courses, consent of instructor.

Original research in the field of analytical, inorganic, organic, or physical chemistry.

199. Independent Studies in Chemistry. (1–4) I, II. The Staff

Directed individual study, normally experimental, open to qualified seniors in the Department of Chemistry.

Graduate Courses

203. Chemical Thermodynamics. (3) I, II. Mr. Wall

Lecture, three hours. Prerequisite: consent of the instructor.

204. Chemical Kinetics. (3) I, II. Mr. Pritchard

Lecture, three hours. Prerequisite: consent of the instructor.

205. Chemical Quantum Mechanics. (3) I, II. Mr. Offen

Lecture, three hours. Prerequisite: consent of the instructor.

209. Advanced Topics in Physical Chemistry. (3) I, II. The Staff

Lecture, three hours. Prerequisite: consent of the instructor.

Selected topics from modern physical chemistry. The content of these courses will vary. Course may be repeated with a different topic. (12 units maximum.)

219. Advanced Topics in Organic Chemistry. (3) I, II. The Staff

Lecture, three hours. Prerequisite: consent of the instructor.

Selected topics from modern organic chemistry. The contents of this course will vary. Course may be repeated with different topic. (12 units maximum.)

229. Advanced Topics in Analytical Chemistry. (3) I, II. Mr. Bickerdike

Lecture, three hours. Prerequisite: graduate standing.

Selected advanced topics from modern analytical chemistry. The contents of this course will vary. Course may be repeated with different topics. (12 units maximum.)

239. Advanced Topics in Inorganic Chemistry. (3) I, II. Mr. Selwood

Lecture, three hours. Prerequisite: consent of the instructor.

Selected topics from modern inorganic chemistry. The content of these courses will vary. Course may be repeated with different topics. (12 units maximum.)

260A–260B. Seminar in Chemistry. (1–1) I, II. The Staff

Required of all graduate students.

299. Research in Chemistry. (1–6) I, II. The Staff

Prerequisite: consent of the instructor.

Education Abroad Program

Goettingen Center

See section on Education Abroad Program for detailed course descriptions.

GC 112A–112B. Organic Chemistry. (6–6)

GC 112A(L)–112B(L). Organic Chemistry Laboratory. (6–5)

GC 112A(S)–112B(S). Seminar in Organic Chemistry. (1–1)

GC 140A–140B. Introduction to Physical Chemistry. (3–2)

GC 140A(L)–140B(L). Physical Chemistry Laboratory. (3–2)

GC 183A–183B. Reaction Mechanisms. (2–2)

CLASSICS

Keith Aldrich, Ph.D., *Associate Professor of Classics (Chairman of the Department).*
John C. Thibault, Ph.D., *Assistant Professor of Classics.*
David C. Young, Ph.D., *Assistant Professor of Classics.*

Alva W. Bennett, M.A., *Acting Assistant Professor of Classics.*
L. Purcell Weaver, M.A., *Associate in Classics.*

The field of Classics incorporates the study of the civilization of ancient Greece and Rome, and of the world and time over which the Greeks and Romans extended their influence. The heart of classical studies is the collection of literary, historical, philosophical, and scientific writings from Homeric down to Byzantine times, which survived to direct the development of modern Western culture. The reconstruction and interpretation of these writings is the primary responsibility of the classical philologist. His colleagues frequently are specialists in some particular field, such as epigraphy, the study of ancient inscriptions; or papyrology, the study of papyrus remains. Others devote their talents to research in specific cultural phenomena, such as Greek political theory, classical art, or mythology. Still others turn their attention to the problems of language, grammar, and linguistics. All these studies are interrelated, and all the classicists pursuing them are in a real sense working toward the same goal: a wider picture of Graeco-Roman culture as a means toward a clearer understanding of our own.

The Major in Classics

The Classics major program offers the student a systematic course of study in the unified field of Graeco-Roman culture. It is designed to accommodate both the aspirant to graduate studies in Classics or related fields and the student primarily interested in an undergraduate liberal arts major.

(a) To prepare for the major in Classics the student must pass Greek 4 and Latin 4 with grades of C or higher, History 4A, and Philosophy 20A.

(b) The major must complete a minimum of 24 upper division units of work, of which 6 units must be in Greek 141A–141B and Latin 101A–101B. At least 11 of the 24 units must be taken in each of the two languages. Courses in translation do not count toward the major. A Classics major is not permitted to take a minor within the department.

The Major in Latin

(a) To prepare for the major in Latin the student must pass Latin 4 with a grade of C or higher, History 4A and Philosophy 20A.

(b) The major must complete a minimum of 24 upper division units of work, of which 4 units must be in Latin 101A–101B. He must also complete Greek 1 and 2, or demonstrate a reading knowledge of Attic Greek equivalent to one year of college study. Courses in translation do not count toward the major.

The Minor in Greek

A minimum of 20 units of work in Greek is required. Of these, 8 units must be in upper division courses, including Greek 141A and 6 units from the following courses: Greek 145, 148, 151A, 151B, 163A, 163B. Courses in translation do not count toward the minor.

The Minor in Latin

A minimum of 20 units of work in Latin is required. Of these, 8 units must be in upper division courses, including Latin 101A and 6 units from the following courses: Latin 105A–105B, 114, 126, 129, 133A, 133B. Courses in translation do not count toward the minor.

Teaching Credentials

The major in Classics or the major in Latin may serve as an appropriate part of the program of studies required for an elementary, secondary, or junior college teaching credential in

California. A student wishing to secure any of these credentials should confer with designated counselors in Classics and in the School of Education.

Latin may be chosen as a teaching minor for any of the named credentials for those who desire to fulfill the prescribed courses listed above.

GREEK

Lower Division Courses

1. Elementary Greek. (4) I. The Staff

2. Elementary Greek (continuation of 1). (4) II. The Staff
Prerequisite: Greek 1 or equivalent.

3. Intermediate Greek. (4) I. The Staff
Prerequisite: Greek 2 or equivalent.
Review of syntax and reading of Attic prose writers.

4. Intermediate Greek: Homer. (4) II. The Staff
Prerequisite: Greek 3 or equivalent. Greek 4 or its equivalent is prerequisite to all higher language courses in Greek.

Upper Division Courses

Greek 4 or equivalent is prerequisite to all upper division Greek courses.

141A–141B. Greek Composition. (2–2) Yr. The Staff
Advanced grammar, sight reading, and extended prose composition.

145. Greek Orators. (3) I. Mr. Aldrich
The study of Greek oratorical prose from Antiphon to its culmination in Demosthenes.

148. Greek Philosophers. (3) II. Mr. Thibault
Philological study in one or more of the major philosophers.

151A–151B. Greek Dramatic Poets. (3–3) I, II. Mr. Thibault, Mr. Young
The study of complete plays by Aeschylus, Sophocles, Euripides, and Aristophanes.

***163A–163B. Greek Historians.** (3–3) I, II. Mr. Thibault, Mr. Young
Reading and research in the historical, literary, and philological aspects primarily of Herodotus and Thucydides.

***167. Hesiod.** (2) I. Mr. Aldrich
The *Theogony, Works and Days,* and fragments. An introduction to archaic religion, mythology, and ethics.

***169. Greek Lyric Poets.** (3) I. Mr. Aldrich
Exclusive of the choral poets. The fragments of Alcaeus, Archilochus, Ibycus, Mimnermus, Sappho, Simonides, Solon, Theognis, and others.

***172. Hellenistic Poets.** (3) II. Mr. Aldrich
Study of the poetry of the Alexandrian period, such as that by Apollonius Rhodius, Callimachus, and Theocritus.

***178. Greek Choral Poets.** (2) II. Mr. Young
Alcman, Bacchylides, and Pindar.

199. Independent Studies in Greek. (1–4) I, II. The Staff

LATIN

Lower Division Courses

1. Elementary Latin. (4) I. The Staff

2. Elementary Latin (continuation of 1). (4) II. The Staff
Prerequisite: Latin 1 or equivalent.

3. Intermediate Latin. (4) I. The Staff
Prerequisite: Latin 2 or equivalent.
Review of forms and syntax, and reading of Roman prose writers.

4. Intermediate Latin: Vergil. (4) II. The Staff
Prerequisite: Latin 3 or equivalent. Latin 4 or its equivalent is prerequisite to all higher language courses in Latin.

Upper Division Courses

Latin 4 or equivalent is prerequisite to all upper division Latin courses.

***101A–101B. Latin Composition.** (2–2) Yr. The Staff
Advanced grammar, sight reading, and extended prose composition.

***105A. Cicero.** (3) I. Mr. Young
The autobiographical and political writings.

***105B. Cicero.** (3) II. Mr. Aldrich
The literary and philosophical writings.

***109. Roman Comedy.** (3) I. Mr. Thibault
Investigation into the origins and development of comedy. Reading of complete plays by Plautus and Terence.

***114. Poets of the Roman Republic.** (3) II. Mr. Young
Principally Ennius, Lucretius, and Catullus.

122. Roman Satire. (2) I. Mr. Young
Horace, Juvenal, Persius, and their antecedents.

* Not to be given, 1964–65.

125. Prose Writers of the Roman Silver Age. (2) II. The Staff
Pliny, Quintilian, Seneca, Suetonius.

126. Poets of the Roman Silver Age. (3) II. The Staff
Exclusive of satire. Lucan, Martial, Statius, Valerius Flaccus, Phaedrus.

129. Augustan Poets. (3) I. Mr. Bennett
Exclusive of satire. Vergil, Horace, Tibullus, Propertius, Ovid.

133A–133B. Roman Historians. (3–3) I, II. Mr. Bennett
Study and reading in the principal historians, such as Sallust, Caesar, Livy, and Tacitus.

199. Independent Studies in Latin. (1–4) I, II. The Staff

Education Abroad Courses

Padua Center

See section on Education Abroad Program for detailed course descriptions.

PC 100A–100B. Greek Language and Civilization. (4–4)

ECONOMICS

*J. Frederick Halterman, Ph.D., *Professor of Economics.*
William F. Kennedy, Ph.D., *Professor of Economics (Chairman of the Department).*
J. Nate Wolfe, B.Litt., *Professor of Economics.*
Mortimer Andron, Ph.D., *Associate Professor of Economics.*
Walter J. Mead, Ph.D., *Associate Professor of Economics.*
Alec P. Alexander, Ph.D., *Assistant Professor of Economics.*
Jerzy F. Karcz, Ph.D., *Assistant Professor of Economics.*

Malcolm N. Liggett, B.A., *Acting Assistant Professor of Economics.*
Koteswara N. Rao, M.A., *Acting Assistant Professor of Economics.*
Richard W. Ruppert, B.A., *Acting Assistant Professor of Economics.*
R. Robert Russell, B.A., *Acting Assistant Professor of Economics.*
Stanley U. Bartlett, B.S., *Lecturer in Economics.*
Joseph I. Lodge, LL.B., *Lecturer in Economics.*
Maxwell C. Pellish, M.A., *Lecturer in Economics.*

The two majors offered in the department are designed for students interested in developing an understanding of the operation of our economy and the operation of the business firm. The major in economics leads to careers in government or industry, to graduate study in the fields of economics, to professional careers as economists, and to general cultural development. The major in business economics is designed for students primarily interested in entering business as a career, and focuses attention on the individual firm and its relations to the economy. The majors also offer valuable preparation for such careers as law and journalism.

Preparation for the Majors

Eighteen units required in the lower division: Economics 1A–1B, 2, 6A–6B, Mathematics 3A or 32.

The Majors

Twenty-four units of upper division courses required in economics including junior and senior sequences to be taken in the following order: Junior year—Economics 100A–100B, Senior year—Economics 103. Economics 106 and 109 do not count toward the 24-unit upper division requirement.

Economics Major

Select an additional 15 units from upper division economics courses (not more than 3 of these units to be from courses listed under Business Economics).

Business Economics Major

In addition to the junior and senior year sequences listed above, select 9 units from the following: Economics 102, 118, 123, 124, 134, plus 6 units in upper division economics.

Combination Social Sciences Major

Students interested in obtaining a major in the combined social sciences, see listing under "Social Sciences."

Economics Minor

Twenty-one units are required; 12 must be upper division. Required courses: Economics 1A–1B, 2, 100A–100B and 6 additional upper division units in Economics.

* Absent on leave, fall 1964.

THE MASTER OF ARTS DEGREE

In conjunction with the general University requirements governing the work for the degree of Master of Arts, the following are specific requirements in economics:

1. Candidates must complete at least 24 units of course work plus a thesis.

2. At least 12 units must be in graduate courses in economics. A maximum of 4 units may be in 299 courses representing credit for research underlying the thesis. The remaining units making up the total of 24 required may be chosen from other graduate courses or from undergraduate courses numbered 100 or above. With the approval of the student's adviser, a maximum of 6 units may be included from graduate or upper division courses in another department.

3. Before certifying a student for formal advancement to candidacy, the department reserves the right to satisfy itself as to the candidate's proficiency by means of special written examinations.

4. All candidates for the M.A. in economics are required to write a thesis. The thesis will provide an opportunity to explore with relative intensity a special interest within economics and to organize a body of knowledge into logical form. The thesis, as an effort in independent research, is regarded as part of the educational experience as well as a demonstration of accomplishment.

The master's degree in economics is designed both for those students who wish to proceed to the Ph.D. degree and for those who do not intend to proceed beyond the M.A. Students are expected to develop skills in research methods and to acquire increased knowledge in such basic fields of economics as theory, history of economic thought, and economic history. Care is taken that the program of each student is an integrated whole; hence, it not only serves as a basis for more advanced work but also provides sound knowledge and useful tools for economic reasoning and research for those students interested in business, government service, or teaching in the secondary schools.

THE DOCTORAL PROGRAM

The Department of Economics of the University of California, Santa Barbara offers a program leading to a Ph.D. degree in economics. For the present, fields of major specialization are limited to economic theory and economic development. Additional fields will be added shortly.

1. For the general University requirements, see the Graduate Program.

2. Admission is by approval of the committee in charge of graduate study and of the chairman of the department. Only candidates with superior performance in their previous work will be considered. Whenever necessary, the Department may require the student to undertake specific courses or other work to remove existing deficiencies in previous training.

3. The student will normally require two years of resident graduate study. At least one of these academic years must be spent in continuous full time residence at the University of California, Santa Barbara.

4. The student will be advanced to candidacy for the Ph.D. degree in economics after successful completion of language examinations, a written qualifying examination, and a general examination.

Reading competence in two foreign languages must be demonstrated. One such language must be French or German.

The screening examination, normally taken at the end of the first year, is designed to test the student's knowledge of economics.

The general examination (written and oral), taken at the end of resident study, is designed to satisfy the Department concerning the professional competence of the student.

5. The student will select a dissertation topic with the advice and approval of his major adviser and the doctoral committee. The dissertation, which is expected to make a significant contribution to knowledge, must be based on original research.

Teaching Credentials

Either a major or a minor in Economics may serve as an appropriate part of the program of studies required for an elementary, secondary, or junior college teaching credential in California. A student wishing to secure any of these credentials should confer with designated counselors in the Department of Economics and in the School of Education.

ECONOMICS

Lower Division Courses

1A–1B. Principles of Economics. (3–3) I, II. The Staff

Prerequisite: Economics 1A is prerequisite to Economics 1B. Not open to freshmen.

2. Elementary Statistics. (3) I, II. Mr. Ruppert

Two lectures and one two-hour laboratory section weekly. Prerequisite: Mathematics 32 or 3A.

Collection, presentation, and interpretation of quantitative economic data; averages, dispersion, index numbers, time series analysis, and simple correlation.

6A–6B. Principles of Accounting. (3–3) Yr. Mr. Bartlett

Two lectures and one two-hour laboratory section weekly. Prerequisite: Economics 6A is prerequisite to Economics 6B. Open to freshmen.

Structure of modern accounting practice; elementary theories and problems related to (6A) the individual owner, (6B) partnership, and corporate type of business organizations.

10. Economic History. (3) I. Mr. Liggett

Development of the modern enterprise or capitalist economy in its North Atlantic setting, with emphasis on institutions and practices.

Upper Division Courses

Prerequisite to all upper division courses: Economics 1A–1B, Economics 109, or consent of the instructor.

100A–100B. Economic Theory. (3–3) I, II. The Staff

Prerequisite: Economics 100A is prerequisite to Economics 100B.

100A. Value and distribution under competition, imperfect competition, and monopoly.

100B. Factors that determine output, national income, and employment.

101. History of Economic Thought. (3) I. Mr. Kennedy

Economic ideas from the mercantilists to the present.

102. Managerial Economics. (3) II. Mr. Rao

Prerequisite: Economics 100A–100B.

Advanced analysis of the theory and practice of decision-making in business firms, utilizing the concepts and techniques of managerial economics.

103. Business Fluctuations. (3) I, II. Mr. Alexander, Mr. Ruppert

Prerequisite: Economics 2, 100A–100B. Recommended for seniors only.

Theories of economic disturbance and the interrelation of the economic processes.

104. Economic Policy. (3) I. The Staff

An analysis of contemporary economic policies and problems.

105. Economic Theory. (3) II. ———

Prerequisite: Economics 100A.

Micro-economics analysis with emphasis on recent developments.

106. Accounting Concepts. (3) II. Mr. Halterman

Prerequisite: upper division standing.

Not open to those who have credit for Economics 6A–6B. Concepts basic to accounting theory and practice as related to the various types of business organization, cost accounting, budgets, and analysis of financial statements.

107. Comparative Economic Systems. (3) I. Mr. Karcz

Socialism, fascism, and capitalism contrasted with regard to making economic decisions, organization of production, mechanism of exchange, banking and investment, distribution of income, status of labor, international trade, and public finance.

109. Introduction to Economics. (3) I, II. The Staff

Not open to those who have taken Economics 1A–1B. Serves as a prerequisite for upper division economics courses.

Intensive study of economic principles.

113. Economic and Industrial History of the United States. (3) II. Mr. Halterman

The economic development of the United States from the period of settlement to the present time, and especially since 1865.

114. Economic Development. (3) II. Mr. Rao

Prerequisite: Economics 1A–1B.

Theories of economic development. Problems of accelerated development in poor countries and of maintaining development in rich countries.

116. Industrial Organization and Public Policy. (3) I. Mr. Mead

Governmental policy of maintaining competition to control economic behavior.

117. The Soviet Economy. (3) II. Mr. Karcz

An analytical and statistical survey of the organization and operating principles of the Soviet economy in the light of geographic and historical backgrounds.

118. Legal Analysis for Business Management. (3) I. Mr. Lodge

The essentials of the law of contracts, agency, bailments, sales, and negotiable instruments.

123. Marketing. (3) I. Mr. Ruppert

The principal marketing methods, institutions, and practices considered from the viewpoint of the consumer, the middleman, and the manufacturer.

124. Business Ethics and Social Responsibility. (3) II. Mr. Kennedy

Application of ethics to the decisions of economic life; the responsibilities of individuals and economic organizations.

130. Public Finance. (3) I. ———
Raising and spending of public money; principles, incidence, problems, and economic effects of taxation.

134. Corporation Finance. (3) II. Mr. Andron
Prerequisite: Economics 6A–6B, 106 or consent of the instructor.
Instruments and methods of financing and controlling the modern corporation and the effect of these on society, the corporation, and its stockholders.

135. Money and Credit. (3) I. ———
Commercial banking, Federal Reserve System, credit creation and monetary theory.

142. Statistics in Economics. (3) I. Mr. Rao
Prerequisite: Economics 2.
Probability, statistical decision theory, regression analysis.

143. Mathematical Economics. (3) I.
Mr. Alexander
Prerequisite: Mathematics 32 or 3A and Economics 100A–100B.
Elements of matrix algebra and simple applications in the fields of linear programming, input-output, and game theory; optimization problems through calculus.

150. Labor Economics. (3) II. Mr. Halterman
Factors contributing to American labor problems, and the attempts on the part of those concerned to obtain harmony.

152. History of the Labor Movement. (3) I.
Mr. Liggett
Historical perspective of the American and foreign labor movements, their organizational structures, ideologies, policies, and practices.

175. Government and Business. (3) II.
Mr. Mead
Industries in which competition has been supplanted by positive public control; an investigation of the methods and problems of regulation and of government ownership and operation.

180. International Trade. (3) I. Mr. Wolfe
An analysis both historical and contemporary of the foreign trade mechanism with emphasis on the impediments to trade, international finance, and modern equilibrium theory.

199. Independent Studies in Economics.
(1–4) I, II. The Staff
Admission by special arrangement.

Graduate Courses

200A. Price and Distribution Theory. (3) I.
Mr. Andron
Micro-economics: the behavior of firms and households, and the determination of prices and resource allocation.

200B. Price and Distribution Theory. (3) II.
Mr. Wolfe
The dynamics of consumer and firm equilibrium; learning models; small-number theory. Introduction to the insistence and stability of competitive systems.

200C. Price and Distribution Theory. (3) I.
Mr. Wolfe
Prerequisite: Economics 200A and 200B.
Current topics in Micro Economic Theory.

201. History of Economic Thought. (3) II.
Mr. Kennedy

204. National Income Theory. (3) I. The Staff
Macro-economics: theory of income and management.

207. Comparative Economic Systems. (3) II.
Mr. Karcz
An analysis of capitalist and planned economies comparing theory and performance in capitalism, socialism and communism.

213. American Economic History. (3) I.
Mr. Halterman

214A. Economic Development. (3) I.
Mr. Alexander
Economic change; economic growth; descriptive and analytical discussion of problems of capital formation and productivity increase.

214B. Economic Development. (3) II.
Mr. Alexander
Prerequisite: Economics 214A.
Advanced topics in the theory and practice of Economic Development.

216A. Industrial Organization and Public Policy. (3) I. Mr. Mead
Advanced topics in theory of industrial organization.

216B. Industrial Organization and Public Policy. (3) II. Mr. Mead
Prerequisite: Economics 216A.
Advanced topics in micro-economic theory applied to industrial organization leading to a third major area of emphasis in the Ph.D. program.

235. Advanced Money and Banking. (3) I.
The Staff
Prerequisite: graduate standing and Economics 135.
Analysis of banking institutions and money, monetary theory, and monetary policy.

242. Applied Economic Statistics. (3) I.
The Staff
Prerequisite: Economics 142.
Special problems in the application of statistical methods to economics, illustrated by a representative selection of empirical studies.

243. Introduction to Econometrics. (3) II.
The Staff
Prerequisite: Economics 242, Mathematics 3A, 3B, 8.
Economic models and identification. Inference in recursive and equilibrium models. Cross section methods and problems of aggregation.

244. Mathematical Economics. (3) I. The Staff

Mathematical analysis of economic theory. Problem studies will include mathematical techniques for economic analysis, including theories of utility, personal probability, value, theory of games, growth, stability, and economic dynamics.

280A. International Trade. (3) I. Mr. Wolfe

A study of international trade theory and its relation to current problems with special emphasis upon balance of payment problems.

280B. International Trade. (3) II. Mr. Wolfe

Prerequisite: Economics 280A.

Advanced topics in the study of international trade theory with a special emphasis upon welfare conditions.

298. Special Studies. (1–4) I, II. The Staff

299. Directed Research. (2–4) I, II. The Staff

Prerequisite: graduate standing and consent of the instructor.

Related Courses in Another Department

Education SS 190. Teaching Procedures in Social Studies. (2) I, II. Mr. Berlak

Education SS 192A–B–C. Student Teaching: Social Studies. (2–2–2) I, II. Mr. Berlak

Education Abroad Courses

Bordeaux Center

See section on Education Abroad Program for detailed course descriptions.

BC 109A–109B. Introduction to Economics. (4–4)

BC 112A–112B. The Economic History of Europe. (4–4)

Goettingen Center

See section on Education Abroad Program for detailed course descriptions.

GC 104–105. Economic Policy and Economic Theory. (8–6)

GC 184A–184B. Social Problems and Economic Planning in the Common Market. (6–4½)

EDUCATION

Gordon S. Watkins, Ph.D., LL.D., D.H.L., *Dean, School of Education (Chairman of the Department).*
Glen W. Durflinger, Ed.D., *Professor of Education.*
William B. Michael, Ph.D., *Professor of Education and Psychology.*
Ralph K. Nair, Ed.D., *Professor of Education.*
Lester B. Sands, Ed.D., *Professor of Education.*
Kermit A. Seefeld, Ed.D., *Professor of Education.*
*R. Murray Thomas, Ph.D., *Professor of Education.*
Loretta M. Byers, Ed.D., *Professor of Education, Emeritus.*
Charles L. Jacobs, Ph.D., *Professor of Education, Emeritus.*
Edith M. Leonard, M.A., *Professor of Education, Emeritus.*
Dorothy D. VanDeman, M.A., *Professor of Education, Emeritus.*
**George I. Brown, Ed.D., *Associate Professor of Education.*
Elizabeth H. Irish, Ed.D., *Associate Professor of Education.*
John A. Nelson, Ed.D., *Lecturer in Education (Head of Supervised Teaching).*
***John A. R. Wilson, Ed.D., *Associate Professor of Education.*
Elsie A. Pond, M.A., *Associate Professor of Education, Emeritus.*
Geneviéve Delattre, Ph.D., *Assistant Professor of Education.*
David C. Epperson, Ph.D., *Assistant Professor of Education.*
Frank L. Field, Ed.D., *Assistant Professor of Education.*
Sara W. Lundsteen, Ph.D., *Assistant Professor of Education.*
George E. Temp, Ed.D., *Assistant Professor of Education.*
Marilyn J. Zweng, Ph.D., *Assistant Professor of Education.*

Ernest L. Boyer, Ph.D., *Lecturer in Education.*
Alma V. Williams, Ph.D., *Lecturer in Education.*

Departmental Supervisors

Marian H. Anderson, M.S., *Associate Professor of Physical Education.*
Ernest L. Boyer, Ph.D., *Lecturer in Education (Junior College).*
George I. Brown, Ed.D., *Associate Professor of Education (Elementary).*
Brenton K. Campbell, Ph.D., *Assistant Professor of Spanish.*
Catherine C. Campbell, M.A., *Associate Professor of Art.*
Van A. Christy, Ph.D., *Professor of Music.*
Norah Clancy, Ed.D., *Supervisor (Elementary).*
Frances M. Colville, Ph.D., *Lecturer in Physical Education.*
Nora Belle Curran, M.A., *Supervisor (Elementary).*
Paul W. Davidson, M.A., *Supervisor (Secondary).*
Jennie S. Dearmin, M.A., *Supervisor (Elementary).*
Geneviéve Delattre, Ph.D., *Assistant Professor of Education.*
Barbara L. Drinkwater, Ph.D., *Assistant Professor of Physical Education.*
David C. Epperson, Ph.D., *Assistant Professor of Education (Elementary).*
Maurice E. Faulkner, Ph.D., *Professor of Music.*
Arthur J. Gallon, Ed.D., *Associate Professor of Physical Education.*
Genevieve W. Haight, M.A., *Associate Professor of English.*
Willard M. Hammer, Ed.D., *Associate Supervisor of Physical Education.*
Elizabeth H. Irish, Ed.D., *Associate Professor of Education (Elementary).*
Joseph E. Lantagne, Ed.D., *Professor of Physical Education.*
John A. Nelson, Ed.D., *Lecturer in Education (Secondary).*
Rene H. Rochelle, Ph.D., *Associate Professor of Physical Education.*
Edwin R. Schoell, Ph.D., *Associate Professor of Speech.*
Kermit A. Seefeld, Ed.D., *Professor of Education (Secondary).*

* Absent on leave, 1964–1965.
** Sabbatical leave, Spring 1965.
*** Sabbatical leave in residence, 1964–1965.

George E. Temp, Ed.D., *Assistant Professor of Education (Elementary).*
Alma V. Williams, Ph.D., *Lecturer in Education (Elementary).*
Robert E. Wilson, M.A., *Lecturer in Spanish.*
Wilton M. Wilton, Ed.D., *Associate Professor of Physical Education.*
Ruth B. Wilvert, M.E., *Supervisor (Secondary).*
Marilyn J. Zweng, Ph.D., *Assistant Professor of Education.*

THE MASTER OF ARTS DEGREE

The School of Education offers a Master of Arts degree with emphasis in either Curriculum Research or Counseling.

For many students, the Master of Arts in Education will be a sixth-year degree program, which pattern will be increasingly true as the five-year credential program becomes generally established. The student wishing to enter this program must satisfy requirements for entry into regular graduate status. He should make application to the Dean of the Graduate Division, University of California, Santa Barbara. Application must be received not later than August 1 for the Fall semester and not later than December 1 for the Spring semester. After being accepted, he will be assigned an adviser in the Department of Education whom he should consult for assistance in planning his graduate program.

Each candidate who enters the program for the Master of Arts degree with an emphasis in *Curriculum Research* must select one of the following areas of specialization: language arts, social studies, science, reading, foreign languages, mathematics, or the arts. His program will consist of courses in research and a study of individual differences as well as courses in the subject-matter emphasis. The thesis will involve research on a problem in curriculum and teaching related to his specialization.

A reading knowledge of one foreign language is required for advancement to candidacy for the degree.

Program of Study. All students will be required to write a thesis and to defend it orally. They will also be required to complete 20 units of course work, at least 8 of which units shall be in 200 series courses in education. Required courses in education include 200, 207, 214, and the section of 258 which is appropriate for the area of curriculum emphasis. From 8–12 units of course work should be in the subject matter area of curriculum emphasis, with the remaining 0–4 units to be chosen from a list of limited electives in education courses.

The Master of Arts degree in *Counseling* is designed for students preparing to be school counselors, school psychologists, school welfare and attendance workers, or psychometrists. Candidates are required to complete 22 units of prescribed courses in psychology and education. All students will be required to write a thesis and to take an oral examination on it. Conditions for entry to the program are described above.

The program meets part of the requirement for the Standard Designated Services Credential with a Specialization in Pupil Personnel Services. Under the new state regulations, a candidate for this credential must complete a master's degree as part of his preparation. Those wishing to enter this program must possess a valid California credential or its equivalent for teaching in the elementary or secondary schools, *or* have completed the following courses or their equivalents: Education 106, 117, 119, and Psychology 162.

Students interested in either of these programs should consult the *Announcement* of the School of Education, Santa Barbara campus.

Major in Education

With the establishment of the School of Education as a graduate school, and in compliance with changes in the State law governing teaching credentials, the following schedule has been established:

Fall 1961—latest date of admission for freshmen students enrolling as Education majors seeking teaching credentials.

Fall 1962—latest date of admission for sophomore students enrolling as Education majors seeking teaching credentials.

Fall 1963—latest date of admission for junior students enrolling as Education majors seeking teaching credentials.

Fall 1964—latest date of admission for senior students who were actually enrolled in teacher training courses on November 1, 1963.

Students enrolled in this program must normally have achieved the B.A. degree in Education by June 1965.

This major leads to a Bachelor of Arts degree. The four-year program is divided into three areas: general education, core subjects in the major field, and additional requirements for the completion of the kindergarten-primary, general elementary or general junior high school teaching credentials.

Every student majoring in education must complete approximately 50 units in general education as a cultural background for professional study. The general education program consists of specified courses in: art, biological science, English and speech, industrial arts, music, physical education, physical science, psychology, and social science. Additional general education up to 15 units is usually elected by students majoring in education.

NOTE: There is no Education major without credential available.

CREDENTIAL PROGRAMS

Credentials for service in public schools in California are issued by the Commission of Credentials of the State Board of Education upon recommendation of institutions authorized for teacher training. The Department of Education provides the professional education courses and directs the student teaching program for all credentials. There are certain acceptable standards which must be met by candidates for teaching credentials, including such qualifications as intelligence, scholarship, aptitude for teaching, physical fitness, and personality.

For a limited time, according to the time table set forth by legislation under State Senate Bill #57 (Fisher Bill) and according to availability of required courses in each specific credential program, the School of Education will continue to recommend issuance of the following teaching credentials: (a) kindergarten-primary; (b) elementary; (c) junior high school; (d) special secondary, entitling the holder to teach in a specified field in any and all grades in the schools; (e) general secondary, authorizing the holder to teach any subject in grades seven through fourteen; (f) junior college; (g) pupil personnel services; and (h) speech correction.

Under the new State regulations, the School of Education offers work leading to recommendation for the following credentials: Standard Teaching Credential with a specialization in elementary school teaching; Standard Teaching Credential with a specialization in secondary teaching; Standard Teaching Credential with a specialization in junior college teaching; Standard Designated Services Credential with a specialization in pupil personnel services; Secondary Teaching Credential with specialized preparation in the area of speech and hearing handicapped which may be substituted for a minor.

Students applying for admission to any of these programs must be eligible to enter UCSB in graduate standing under the regulations set forth by the Graduate Division.

Scholarship. Admission into the five-year elementary and secondary credential programs requires a 2.5 grade point average in all upper division courses and a 2.75 grade point average for upper division courses in the major. Admission requirements

for the junior college and pupil personnel credential programs are the same as for admission into the master's degree programs. In applying these standards, the Dean of the Graduate Division may give some consideration to high scores attained on the achievement tests of a recognized national testing service.

For more detailed information concerning programs in education, see the *Announcement* of the School of Education, University of California, Santa Barbara.

Kindergarten-Primary Credential

The requirements and the program of courses leading to this credential are described on page 96 of the UCSB *Catalogue* for 1963–64. Since only those students who were registered in the program prior to July 1, 1964 are eligible to receive this credential, interested persons are referred to that listing.

Under the provisions of State Senate Bill #57, those wishing to teach in kindergarten and the primary grades must complete the requirements for a Standard Teaching Credential with a specialization in elementary school teaching.

General Elementary Credential

(Four-year Plan)

The general elementary credential entitles the holder to teach grades one through eight.

General Requirements. Education majors wishing to specialize in elementary education must satisfy the College of Letters and Science general education requirements including specifically Art 31, History 182, Physical Education 1–16A, Psychology 1 or 101, Speech 11 or 101, and English 189. Additional courses required by the department include Geography 1 or 2, Music 11, Home Economics 10, Health Education 48 (women), and Educational Arts and Crafts 45.

Requirements for the Major. Courses required for the education major and additional courses required for the four-year elementary teaching credential will be found listed on pages 94–97 of the 1963–64 UCSB *Catalogue*. However, only those enrolled in the program prior to Nov. 1, 1963 are eligible to receive this credential, and they will presumably have completed all such courses and requirements prior to publication of the present catalogue.

Standard Teaching Credential with a Specialization in Elementary School Teaching

(Five-year Plan)

An applicant for a standard teaching credential with a specialization in elementary teaching must complete a four-year program at an approved institution with a baccalaureate or higher degree, plus an additional year of postgraduate work.

1. General Education Requirements:

In completing the general education core as required, credential candidates must meet the pattern of area requirements outlined below. Students may, by careful selection of courses, be able to satisfy many credential and graduation requirements simultaneously.

The new credential law requires Mathematics 38 as well as English 1A–1B and an additional course in English composition plus forty-five semester hours of course work to be completed in five of the following areas: (*Not more than six semester hours of course work taken to satisfy this requirement shall apply toward the fulfillment of the requirements for either a major or a minor.*)

(a) Humanities, excluding foreign languages for the purposes of this requirement. English 1A–1B and the additional course in English composition can count toward this requirement.

(b) Social sciences. (Course work taken to fulfill the requirement in History and Constitution of the United States may be counted.)

(c) Natural sciences.

(d) Mathematics having as a prerequisite an understanding and knowledge of high school algebra and geometry. (Mathematics 38, *Fundamentals of Arithmetic* is required for the Elementary credential.)

(e) Fine arts.

(f) A foreign language. Undergraduate students at the University of California, Santa Barbara, must meet the University's language requirements. However, transfers who have graduated from another institution will be governed by the Education Code, which states: The successful completion in an approved institution of an examination covering the speaking, reading, writing, and understanding of a foreign language shall be accepted in lieu of course work in a foreign language, but shall not count toward the 45 semester hours specified. For any credential issued prior to September 1, 1967 this foreign language requirement is waived for students who have successfully completed in a high school two full years in a single foreign language.

2. Majors for the Prospective Elementary Teacher:

The student must complete a major other than Education. Twenty-four semester hours of upper division or graduate work are required for the major.

(a) Single subject majors at the University of California, Santa Barbara, which are legally acceptable for the elementary teaching credential:

Anthropology
Art—history emphasis
Biology—analytical or field
Botany
Chemistry
Classics: Latin
Drama
Economics
English
Foreign Language:
Spanish
French
German
Italian
Geography
Geology
History
Mathematics
Music
Philosophy
Physics
Political Science
Psychology
Sociology
Speech
Zoology

(b) Diversified majors which are legally acceptable for the elementary credential (24 semester hours of upper division or graduate work in two or more subjects in either of the following groups): Biological Sciences, Social Sciences. Advisers in the Department of Education should be consulted regarding specific requirements.

(c) Students who major in areas such as physical education and home economics are permitted to teach only in the specific area of the major in elementary schools.

3. Minors for the Prospective Elementary Teacher:

All single subject minors listed in the University of California, Santa Barbara *General Catalogue* are legally acceptable for the credential. The minor must contain at least 20 units. The student may wish to seek advice concerning minors which have the most applicability to elementary teaching.

4. Prerequisites for the Professional Sequence of Courses:

The student must include the following courses in his undergraduate program in preparation for the professional courses to be taken in the fifth year: Math 38, Speech

11, Art 31, music 11, Physical Education 1-16A, Psychology 1, 11 or 101, and an English composition course beyond English 1A–1B.

In addition, the following courses are recommended: History 182 and English 189.

5. Professional Sequence for Elementary Education:

Professional courses, planned as an integrated fifth-year block, will include: Psychological and Sociological Foundations of Education, Elementary Procedures, Student Teaching, Music, Art, Physical Education, and Audio-visual Education. The staff of the Department of Education is planning a team teaching approach to these courses. Additional information as to units of credit will be available later.

General Junior High School Credential

Issuance of this credential will be discontinued under the provisions of State Senate Bill #57. Those who are already enrolled in the four-year credential program and are eligible to receive the general junior high school credential are referred to the listing of the program in the 1963–1964 UCSB *Catalogue.*

Those wishing to teach in the junior high school grades under the new credential provisions are advised to complete the requirements for a Standard Teaching Credential with a specialization in secondary teaching, which authorizes the holder to teach all classes in grades seven through fourteen, except as otherwise provided by law.

General Secondary Credential*

The California general secondary credential authorizes the holder to teach any and all subjects in California (with the exception of classes organized under the provisions of the Federal and State Vocational and Education Acts) in grades 7 through 14. This credential, however, will soon be discontinued pursuant to regulations established by Senate Bill #57 (Fisher Bill) and the program is available only to students who have senior or postgraduate standing in the Fall semester 1964.

The general secondary credential requires a year of course work beyond the A.B. degree, and at this institution it is considered a graduate program. For details of admission, preparation, scholarship, and residence requirements see the listing of The Graduate Program. Student teaching requirements and prerequisites are listed elsewhere.

Program. The program of every student who is seeking the general secondary teaching credential must be approved by the chairman of the department of his teaching major in consultation with an adviser in the Department of Education. In addition, there is required a teaching minor which may be completed before graduation or during the graduate year. Certain non-teaching majors, such as psychology, are acceptable if supported by two teaching minors. The student should consult an adviser in the Department of Education.

To be recommended for the credential, the candidate must complete at least 24 units of upper division and/or graduate work in his graduate year, 6 of which must be in his major and/or minor subject fields, and at least 6 in education. At least twenty of these twenty-four units must be earned while in residence on the Santa Barbara campus. A total of 24 units in education courses is required for the credential, of which six units should be completed as an undergraduate if the student wishes to satisfy the requirements for the program in two graduate semesters. The required education courses should be taken in the following order: Education 170, 110, 112, 117, 120, 147, S 190A or S 190B and S 192.

* Open only to those enrolled in the program prior to November 1, 1963.

Standard Teaching Credential with a Specialization in Secondary School Teaching

An applicant for a standard teaching credential with a specialization in secondary teaching must complete a four-year program at an approved institution with a baccalaureate or higher degree, plus an additional year of postgraduate work.

1. General Education Requirement.

In completing the general education core, credential candidates must meet the pattern of area requirements outlined below. Students may by careful selection of courses be able to satisfy many credential and graduation requirements simultaneously.

The new credential law requires English 1A–1B and an additional course in English composition plus forty-five semester hours of course work to be completed in 4 of the following areas: (*Not more than six semester hours of course work taken to satisfy this requirement shall apply toward the fulfillment of the requirements for either a major or a minor.*)

(a) Humanities, excluding foreign languages for the purposes of this requirement. English 1A–1B and the additional course in English composition can count toward this requirement.

(b) Social sciences. (Course work taken to fulfill the requirement in History and Constitution of the United States may be counted.)

(c) Natural sciences.

(d) Mathematics having as a prerequisite an understanding and knowledge of high school algebra and geometry.

(e) Fine arts.

(f) A foreign language. Undergraduate students at the University of California, Santa Barbara, must meet the University's language requirements. However, transfers who have graduated from another institution will be governed by the Education Code, which states: The successful completion in an approved institution of an examination covering the speaking, reading, writing, and understanding of a foreign language shall be accepted in lieu of course work in a foreign language, but shall not count toward the 45 semester hours specified. For any credential issued prior to September 1, 1967 this foreign language requirement is waived for students who have successfully completed in a high school two full years in a single foreign language.

2. *Major: A major is defined as any of the following:

(a) *Single Subject Major.* Twenty-four semester hours of upper division or graduate course work in a single subject constitute a major in that subject according to State Board of Education requirements* when all of the following circumstances exist:

(1) The subject is normally taught in the public schools.

(2) Six of the 24 semester hours are taken as a graduate student. (If the applicant completes six semester hours of graduate course work toward completion of a minor, this six semester hour graduate requirement is waived.)

(b) *Major in Subject Constituting Part of an Interdepartmental Major.* Fifteen semester hours of upper division or graduate course work in one of the subjects that make up the course work of an interdepartmental major offered by an approved institution constitute a major in that subject when all of the following circumstances exist:

(1) The subject is normally taught in the public schools.

* These are minimum State requirements for the credential. Students should confer with major and minor departments concerning University requirements for the baccalaureate degree.

(2) The interdepartmental major is comprised of two or more subjects normally taught in the public schools in any one of the following academic subject matter areas: (a) Biological sciences, (b) Physical sciences, (c) Social sciences, (d) Humanities, (e) Any biological or physical science and mathematics, and (f) Fine arts.

3. *Minor: A minor is defined as course work (in a subject area normally taught in the public schools) as described below.

(a) When the applicant's major is in an academic subject matter area, twenty semester hours of course work in a single subject shall constitute a minor.

(b) When the applicant's major is not in an academic subject matter area, twenty semester hours of course work, of which 12 semester hours are at the upper division or graduate level, in a single academic subject shall constitute a minor.

4. Professional Preparation:

The professional preparation sequence usually taken during the fifth year, will include courses in the following areas: (a) Psychological Foundations, (b) Sociological Foundations, (c) Curricular and Instructional Procedures, and (d) Student Teaching.

Junior College Credential

The California Standard Teaching Credential with a specialization in junior college teaching authorizes the holder to teach in his major or in his minor in grades 13 and 14, and in his major only in grades 11 and 12.

Applications for admission to the program leading to the junior college credential may be filed by students concurrently registered in a master's degree program at the University of California, Santa Barbara, or by those who are holders of M.A. degrees received from any recognized college or university. The application should be filed with the Dean of the Graduate Division and admission will be based upon likelihood of success in the proposed work (as judged largely by previous college record), recommendation of the chairman of the department of the student's major, a personal interview with advisers in the Department of Education, and approval of the Dean of the Graduate Division and of the Dean of the School of Education.

Since a master's degree is required for this credential, further information concerning admission, preparation, scholarship, and residence may be found in the listings under the heading of The Graduate Program in another part of this *Catalogue*.

Candidates for the junior college credential must complete a single-subject minor. If the major is nonacademic, the minor must be in an academic subject-matter area and must include at least 12 upper division or graduate course units.

In addition to completion of requirements in the major and the minor, the student must have credit for Education C 190 (3 units). This course may be taken during the senior year or during the graduate year.

The requirement for supervised teaching may be satisfied by either Option 1 or Option 2:

1. Forty-five clock hours of actual teaching in the classroom in grades 13 or 14, or in the lower division of a college or university approved by the Dean of the School of Education, performed as student teaching.

2. Forty-five clock hours of supervised actual teaching in the classroom in grades 13 or 14, or in the lower division of a college or university approved by the Dean of the School of Education.

* These are minimum State requirements for the credential. Students should confer with major and minor departments concerning University requirements for the baccalaureate degree.

The Standard Designated Services Credential with a Specialization in Pupil Personnel Services

Certification for this credential requires up to sixty units of approved postgraduate work pertaining to pupil personnel services, including a master's degree in one of certain designated areas. While no previous teaching experience is required, some teaching experience may be substituted for part of the required course work.

Acceptance into the program will depend on likelihood of success in the proposed work, as judged by the previous academic record, and on the results of interviews with advisers in the Department of Education.

Students must meet all requirements for admission to the regular graduate program of the Santa Barbara campus, as outlined elsewhere in this *Catalogue*. Applications for admission should be addressed to the Dean of the Graduate Division who, together with the Dean of the School of Education, must approve all admissions.

For more detailed information, consult the *Announcement* of the School of Education, University of California, Santa Barbara.

Student Teaching

The public schools in Santa Barbara and in nearby cities and towns afford the laboratory for student teaching. Both demonstration of modern practices and supervision of student teachers are carried out by selected teachers and principals of these schools in cooperation with the School of Education. Student teachers are placed in all grades from kindergarten through junior college.

Application. Every student who is preparing for a teaching credential must file his application for student teaching with the chairman of his major department not later than the end of the first six weeks of the semester immediately preceding that in which he hopes to be given a student teaching assignment. This application must be forwarded within two weeks by the chairman to the Head of Supervised Teaching, School of Education, who will refer it to the Committee on Teaching Eligibility. The candidate will be advised of the committee's action on his application.

Scholarship Regulations. A student enrolled in any four-year credential curriculum must have a minimum 2.0 grade-point average when he applies for assignment to supervised teaching. If his over-all average should fall below a C grade, he may not register for student teaching until the C average has been reestablished. No student may be recommended for a teaching credential if he has less than a 2.0 average in student teaching courses, and any grade below a C in such courses is not considered as passing.

In the five-year credential curricula, supervised teaching is always done after achievement of the B.A. An applicant for a supervised teaching assignment must, during his junior and senior years, have maintained a grade-point average of 2.75 in his major and an over-all average of 2.50. After admission to the program the student must maintain an over-all minimum grade-point average of 2.75. A student who fails to maintain these standards of scholarship is subject to dismissal from the credential program.

Unit Credit. Unit credit for student teaching will be allowed only for work completed under the direction of the Head of Supervised Teaching. Experienced teachers may be excused from a certain amount of student teaching after ability to teach has been demonstrated. However, no unit credit will be allowed in case such a waiver is granted.

Facilities. Student teaching assignments will ordinarily be located in the Santa Barbara vicinity. However, it is sometimes necessary to make assignments fifty or

more miles from the campus, and the student must arrange for his own transportation. In all cases student teaching is performed in the public schools under the direction of University supervisors.

Physical Examinations. All candidates for any teaching credential must pass a physical examination before a student teaching assignment may be granted. This is a preliminary evaluation of the candidate's physical suitability for teaching and should be taken at the end of the senior year by students in five-year curricula. It is the student's responsibility to see that this health examination is made and that the certificate issued by the Health Center is filed in the Office of Supervised Teaching. A student who has been absent for one or more semesters must pass a physical examination after his return in order to enroll in supervised teaching.

Preliminary Tests

Proficiency Test. Before being accepted for student teaching, candidates must pass a proficiency test in the statutory subjects (reading, arithmetic, spelling, language, and penmanship). This test, which is scheduled during Registration Week each semester, should be taken not later than the first semester of the senior year, or preferably earlier. Transfer students should arrange to take it as nearly as possible in conformity with this schedule. *All* students who desire to enroll in supervised teaching must meet this requirement.

Speech Test. All candidates for teaching credentials must prove their proficiency in speech by passing Speech 11 or 101 if they have been registered as undergraduates on the Santa Barbara campus. Transfer students may present credit for an equivalent course and in addition must pass the speech proficiency test administered during the first six weeks of the first semester in which they are enrolled at Santa Barbara. Students should refer to the current *Schedule of Classes* which lists speech proficiency orientation meetings which must be attended during Registration Week prior to taking the speech proficiency test. Further inquiries may be made at the Speech Department on campus.

Special cases in which the above rules may not apply may be discussed with the Head of Supervised Teaching.

EDUCATION

Upper Division Courses

100. Principles of Elementary Education. (3) I, II. Mr. Berlak

Prerequisite: not to be taken by students who have credit for Education 57.

Emphasis is placed on the role of the elementary school in American education. The historical, philosophical, and sociological factors are considered.

101. History of Education. (2) I. Mr. Sands

Educational thought and practice as a phase of social progress. Ancient and medieval conceptions and their effect on modern education.

102. History of American Education. (2) II. Mr. Sands

Educational ideals and movements: their effect on modern education.

103. Social Foundations of Education. (3) I, II. Mr. Epperson

This survey provides both an historical and comparative perspective on contemporary social and philosophical issues as they relate to educational decision making.

105. Comparative Education. (2) I, II. Mr. Sands

A survey and critical study of educational theory, practice, and procedures in the principal countries and regions of the world. Education as an instrument of national power; the influence of natural, human, and institutional forces.

106. Philosophy of Education. (2) I, II. Mr. Sands

The educational classics and their meaning for modern man. Critical analysis of these classics from accepted philosophic viewpoints and implications for educational practices.

110. Educational Psychology. (3) I, II. The Staff

Prerequisite: Psychology 1 or 101.

A study of the nature and dynamics of human behavior. Emphasis is placed upon the application of psychological principles to the educative process, personality development and assessment.

111. Child Growth and Development. (2) I, II. Mrs. Williams

Prerequisite: Psychology 1 or 101.

Mental and physical growth and development; personal and social adjustment; preventive hygiene. Directed observation of normal children.

112. Growth and Development of the Adolescent. (2) I, II. Mr. Thomas, Mrs. Williams

Prerequisite: Psychology 1 or 101.

The physical, mental, moral, spiritual, and social traits of adolescence; mental hygiene. Directed observation.

117. Pupil Personnel and Counseling. (2) I, II. Mr. Field, Mrs. Williams

Prerequisite: Education 190 or 191 (or may be taken concurrently).

An introductory course emphasizing the school's pupil personnel roles, practices, and techniques.

119. Measurement and Evaluation in Education. (3) I, II. Mr. Durflinger, Mr. Michael

Prerequisite: Education 110.

Purposes and techniques of evaluation, including statistical measures, construction of tests, tabulating and scoring standard examinations, interpretations of evaluations.

119P. Measurement and Evaluation in Physical Education. (2) I, II. Miss Colville, Mr. Rochelle

Elementary statistical procedure. Construction, analysis, interpretation, and evaluation of the various tests.

120. Measurement and Evaluation in the Secondary School. (2) I, II. Mr. Durflinger, Mr. Michael

Prerequisite: Education 110.

Introduction to the theory of measurement and evaluation; achievement test construction; critical study of typical tests; reports to parents and cumulative records; elementary statistical techniques.

***135. Remedial Reading.** (2) I, II. ———

Methods and materials of instruction and diagnosis; remedial measures applied to difficulties in reading for children in the elementary and junior high schools.

***136A–136B. Remedial Reading Laboratory.** (1–1) I, II. ———

Prerequisite: approval of the instructor. Education 135 and 136 may be taken concurrently.

Students assigned to directing remedial reading activities at any designated level in the school.

***139. Curriculum Development.** (2) I, II. ———

Basic principles and practices in elementary and secondary curriculum development as derived from the psychological, sociological, and philosophical considerations.

142. The Teaching of Mathematics in the Secondary School. (2) II. Miss Zweng

Prerequisite: Mathematics 101A or concurrent enrollment in course; or consent of instructor.

A study of teaching procedures consistent with the fundamental concepts of mathematics and newer learning theories. Attention will be given to sets, algebraic structure, functions, and the nature of proof.

147. Audio-Visual-Radio Education. (2) I, II. ———

Lecture, two hours; laboratory, one hour.

Audio-visual and radio aids in classroom teaching in elementary and secondary schools.

149A. Field Work in Counseling. (3) I, II. Mr. Field, Mrs. Williams

Prerequisite: course requirements for pupil personnel credential and permission of instructor.

Supervised experience in counseling students on educational, vocational, and personal problems, participation in case conferences and related activities.

149B. Field Work in Counseling. (3) I, II. Mr. Field, Mrs. Williams

Prerequisite: course requirements for pupil personnel services credential and permission of the instructor.

Supervised experience in counseling students on educational, vocational, and personal problems, participation in case conferences and related activities. *Particular emphasis on school counseling.*

149C. Field Work in Counseling. (3) I, II. Mr. Field, Mrs. Williams

Prerequisite: course requirements for pupil personnel services credential and permission of the instructor.

Supervised counseling of students and parents on problems of attendance and welfare.

164. Educational and Vocational Guidance. (2) I, II. Mr. Nair

Prerequisite: Education 110 and 117.

The counseling and appraisal processes used in the guidance of pupils' vocational preparation. Required of candidates for the Pupil Personnel Services Credential.

170. Secondary Education. (3) I, II. Mr. Seefeld

Historical background; present practices; organization; program; curricula; methods and personnel in the elementary and secondary schools. Observations required.

180. Education Sociology. (2) I, II. Mr. Epperson, Mr. Sands

American culture—social groups, processes, institutions, and changes—and its relation to education. Influence of organized education in social evolution.

183. Leadership Theory and Practice. (3) II. Mr. Epperson

Prerequisite: Sociology 161.

Theories of interpersonal relations applied to problems of leadership in education.

***186. Laws Relating to Schools and Children.** (2) I, II. ———

Prerequisite: ten hours in education or approval of Education Department adviser.

Laws relating to social welfare, social case work, school guidance programs, work education programs, child welfare, attendance regulations; Labor Code.

* Not to be offered, 1964–65.

190. Teaching Procedure.

All 190 courses are courses in methods of teaching. They include a study of curriculum and of the procedures in use in teaching in the particular area or at the particular level indicated in the title of the course. The courses in the general fields include observation of demonstration teaching followed by discussion.

General secondary credential candidates are required to take Education S 190A and Education S 190B, or the special methods courses offered by their major or minor departments.

The special secondary fields offer methods of both the elementary and secondary levels. See respective department chairmen for prerequisites for 190 courses.

AR 190. Arithmetic Procedure for the Elementary School. (3) I, II. Mrs. Irish, Miss Zweng

Prerequisite: Education 110 and 111. To be taken concurrently with Education EL 190.

Problems of teaching arithmetic in elementary and junior high education.

C 190. Junior College Procedures. (3) I, II. Mr. Boyer, Mr. Seefeld

Prerequisite: admission to program leading to junior college credential.

A study of the history, goals, organization, and curriculum of the two-year college, with emphasis on the junior college teacher and the problems and procedures related to classroom instruction.

EL 190. Elementary School Procedure. (5) I, II. The Staff

Prerequisite: Education 110, 111. To be taken concurrently with Education AR 190, Physical Education 138.

This course covers the teaching of language arts, social studies and reading in the elementary school. Students build a social studies unit, observe classes in elementary schools in addition to reference reading and discussion of technique. Includes principles of education.

H 190. Teaching Procedures in Home Economics. (2–3) I, II. ———

J 190A. Junior High School Procedure—Mathematics, Biological and Physical Sciences. (2) I, II. The Staff

J 190B. Junior High School Procedure—English, Social Sciences, and Foreign Languages. (2) I, II. The Staff

ME 190. Elementary Music Education. (2) I, II. The Staff

Elementary education majors must have completed Music 11, 15 and EL 190 (Elementary Procedure) before taking this course, or be enrolled in Elementary Procedure concurrently.

MI 190. Methods of Teaching Instrumental Music. (2) I. Mr. Faulkner

Prerequisite: Music 21, 22, 23.

Includes methods in both elementary and secondary schools.

MV 190. Methods of Teaching Vocal Music. (2) II. Mr. Christy

Prerequisite: Music 20A–20B or equivalent.

Includes methods in both elementary and secondary schools.

P 190. Teaching Procedures in Physical Education. (2) I, II. Mr. Wilton

Methods, materials, and procedure of teaching, program planning, and organization in physical education, together with observation in elementary and secondary schools.

PSC 190. Physical Science in the Elementary School. (3) I, II. Mr. Temp

The place of the physical sciences in the curriculum and the procedure used in teaching physical science concepts in the elementary school.

S 190A. Secondary School Procedures—General. (2) I, II. Mr. Seefeld

Prerequisite: Education 110 and 170.

Articulation among the several school subjects. Classroom teachers' legal boundaries. Disciplinary routines. Curricular and cocurricular duties and responsibilities. Selection of methods of teaching, in terms of the subject area.

S 190B. Secondary School Procedures—Mathematics and Physical Sciences. (2) I, II. Mr. Seefeld

Prerequisite: Education 110 and 170.

The school curriculum and the procedures used in teaching in the areas mentioned at the junior and senior high school levels. There will be observations of demonstration teaching followed by discussion. Students prepare lesson plans and conduct simulated classes at the high school level.

SA 190. Teaching Procedures in Art. (2) I, II. Mrs. Campbell

Procedures used in the teaching of art.

SB 190. Teaching Procedures in the Biological Sciences. (2) I, II. ———

Prerequisite: major in one of the biological sciences, plus senior or graduate status; or minor in one of the biological sciences, plus senior or graduate status.

Review and orientation of subject matter in terms of philosophy and content, preparatory to secondary school teaching. Includes comparative studies of methods, examination of texts and courses of study, actual classroom observation, and individual practice in science subject matter presentation.

***SC 190. Natural Sciences in the Elementary School.** (3) I, II. ———

SE 190. Problems in Teaching English Literature and Composition in Secondary Schools. (2) I. Mrs. Haight

Prerequisite: senior or graduate standing.

This course is designed for seniors and graduate students undertaking a teaching major or minor in English, and should be completed before student teaching. The course is required of candidates for

* Not to be given, 1964–65.

the general secondary credential with a major in English, and is accepted in partial satisfaction of the 24-unit requirement in education for the credential.

SF 190. Procedures in Teaching French in Secondary Schools. (2) I, II. Mrs. Delattre

Prerequisite: French 101A–101B.

Required of candidates for the general secondary credential with a major in French. Accepted in partial satisfaction of the 24-unit requirement in education for the credential.

SG 190. Procedures in Teaching German. (3) I. Mr. Gottschalk

SN 190. Procedures in Teaching Spanish in Secondary School. (2) I, II. Mr. Campbell, Mr. Wilson

Prerequisite: Spanish 101A–101B.

Required of candidates for the general secondary credential with a major in Spanish. Accepted in partial satisfaction of the 24-unit requirement in education for the credential.

SP 190. Speech Activities and Methods for Teachers. (2) I or II. Mr. Schoell

SS 190. Teaching Procedures in Social Studies. (2) I, II. Mr. Nelson

Prerequisite: senior or graduate standing; major in economics, history, political science, sociology, or combination social sciences.

This course is required of candidates for the general secondary credential with a major in one of the named social sciences, and is accepted in partial satisfaction of the 24-unit requirement in education for the credential.

EL 191A. Procedures in Elementary Curriculum. (5) I. The Staff

Prerequisite: Education 110 and 111, or 109. Graduate standing.

The application of research and theory in curriculum to classroom practice. Overview of the curriculum with major emphasis on reading and mathematics; introduction to social studies and language arts.

EL 191B. Procedures in Elementary Curriculum. (4) II. The Staff

Prerequisite: Education 110, 111, EL 191A, or 109. Graduate standing.

A continuation of Education EL 191A. Major emphasis on social studies, science, and language arts; minor emphasis on reading and arithmetic.

192. Supervised Teaching.

Prerequisite: Education 190. Teaching Procedures, must be completed *on this campus.*

All 192 courses are concerned with student teaching in the various fields and at the different levels indicated by the titles. Experience in classroom teaching carried on under supervision of classroom teachers and college supervisors is planned to give the student opportunity to put into practice the principles of teaching and theories of education which have been presented and discussed previously in preliminary courses in education. Practical work in the classroom is supplemented by conferences with teachers and supervisors, and by written lesson plans and assigned work. Prerequisites required for all 192 courses. See respective department chairmen. Student teaching for the general secondary or junior college credential is open only to students admitted to the graduate program.

A 192A–192B. Student Teaching: Art. (2–2) I, II. Mrs. Campbell

C 192A–192B. Student Teaching: Junior College. (2–2) I, II. Mr. Boyer, Mr. Seefeld

Prerequisite: Education C 190, Junior College Procedures.

EC 192A. Student Teaching: Kindergarten. (4) I, II. Miss Clancy

EC 192B. Student Teaching: Primary. (6) I, II. Miss Clancy

EL 192A–192B. Student Teaching: Elementary School. (2–6) I, II. The Staff

Prerequisite: Education 110; 111; AR 190 and EL 190 or EL 191; Physical Education 138. Courses Art 195, Education 147, ME 190, PSc 190 may be taken concurrently. Maximum of 8 units applied to graduation.

H 192A–B–C. Student Teaching: Homemaking. (2–2–2) I, II. ———

J 192A–B–C–D. Student Teaching: Junior High School. (2–2–2–2) I, II. Miss Horrall

M 192A–B–C–D–E–F. Student Teaching: Music. (1) I, II. The Staff

Prerequisite: Education MI 190, MV 190. May be repeated for credit up to 6 units, although only 4 units are required.

P 192A–B–C. Student Teaching: Physical and Health Education. (2–2–2) I, II. The Staff

S 192A–B–C. Student Teaching—Secondary Education. (2–2–2) I, II. Mr. Davidson, Mr. Nelson

Prerequisite: procedures class in major or education procedures class. Open to students who have been accepted in regular graduate status.

SB 192A–192B. Student Teaching: Biological Sciences. (2–2) I, II. ———

Prerequisite: Education SB 190 and admission to student teaching.

SE 192A–192B. Student Teaching: English. (2–2) I, II. Mrs. Haight

Prerequisite: Education SE 190 and admission to student teaching.

SF 192A–B–C. Student Teaching: French. (2–2–2) I, II. Mrs. Delattre

Prerequisite: Education SF 190 and admission to student teaching.

Required of candidates for the general secondary credential with a major in French. Accepted in partial satisfaction of the 24-unit requirement in education for the credential.

SG 192. Student Teaching: German. (2) II. Mrs. Herritt

SN 192A–B–C. Student Teaching: Spanish. (2–2–2) I, II. Mr. Campbell, Mr. Wilson

Prerequisite: Education SN 190 and admission to student teaching.

Required of candidates for the general secondary credential with a major in Spanish. Accepted in partial satisfaction of the 24-unit requirement in education for the credential.

SP 192A. Student Teaching: Speech. (2–4) I, II. Mr. Schoell

SP 192B. Student Teaching: Speech and Hearing. (2–4) I, II. Mr. Schoell

Prerequisite: Speech 177D.

Students must complete a total of 90 clock hours of actual teaching exclusive of observation.

SS 192A–B–C. Student Teaching: Social Studies. (2–2–2) I, II. Mr. Davidson, Mr. Nelson

Prerequisite: Education SS 190 and admission to student teaching.

193. Teaching Problems.

Individual and group problems of student teachers at the level of education indicated in the title. To be taken concurrently with student teaching.

EC 193A–193B. Teaching Problems: Early Childhood Education. (1–1) I, II. Miss Clancy

EL 193A–193B. Seminar in Student Teaching Elementary. (1–1) Yr. The Staff

To be taken concurrently with EL 192A–192B or EL 191A–191B.

J 193A–193B. Teaching Problems: Junior High Education. (1–1) I, II. The Staff

199. Independent Studies in Education. (1–4) I, II. The Staff

Open only to advanced students approved by the chairman of the department.

Study of special problems in various fields of education.

Graduate Courses

200. Research Methods in Education. (2) I, II. Mr. Michael

Prerequisite: graduate standing and consent of the instructor.

Basic principles of scientific method exemplified by experimental, survey, longitudinal and correlational studies; design and reporting of original investigations; bibliographic experience.

205. Comparative Education. (2) I, II. Mr. Sands

Prerequisite: graduate standing and consent of instructor.

Descriptive analysis and critical appraisal of the educational thought and practices of the principal regions of the world, with special emphasis on the comparative values of American and foreign educational systems.

207. Human Variability and Learning. (2) I, II. Mr. Brown, Mr. Thomas

Prerequisite: California Teaching Credential.

Analysis of ways different societies regard human variability. Analysis of research on meeting individual differences in classrooms, emphasizing intellectual, psycho-physical, social-class, and emotional skills and handicaps. Creation of new techniques and materials to meet variability among students.

210. Theories of Learning. (2) I, II. Mr. Durflinger, Mr. Wilson

Prerequisite: graduate standing, Education 110, 111, 112, and consent of instructor.

Analysis and critical study of theories and models of human learning, review and evaluation of current literature on the learning process, and examination of the concept of the teaching-learning process.

211. Psychological Foundations of Education. (3) I, II. Mr. Brown, Epperson

Prerequisite: graduate standing and consent of the instructor.

Interdisciplinary approaches to theory and research on student behavior.

214. Educational Statistics. (2) I, II. Mr. Michael

Prerequisite: a course in elementary statistics or consent of the instructor.

Basic principles of statistical inference including selected topics in experimental design, analysis of variance and covariance, multiple correlation and regression, factor analysis, and data processing.

217A–217B. Principles of Guidance. (2–2) I, II. Mr. Field

Prerequisite: graduate standing, Education 110, 117, 119 and consent of the instructor.

217A. Analysis of interpersonal relations, with special attention to case conferences, community and school groups as agents for effecting individual adjustment.

217B. Clinical experience. 217A and 217B are to be taken concurrently and 217B may be repeated for credit with consent of the student's adviser.

219A–219B. Counseling Techniques. (2–2) I, II. Mr. Field

Prerequisite: graduate standing and Education 110, 114, 117, and consent of the instructor.

219A. Analysis of contemporary procedures and practices in counseling and guidance, with special attention to directive and non-directive techniques, including interviewing.

219B. Clinical experience. 219A and 219B are to be taken concurrently and 219B may be repeated for credit with consent of the student's adviser.

220. Measurement and Evaluation. (2) I, II. Mr. Durflinger, Mr. Michael

Prerequisite: graduate standing and consent of the instructor.

Consideration of advanced principles of educa-

tional measurements including topics of reliability, validity, scaling, and norms; and of their application to test construction, interpretation, and reporting.

225. Social Foundations of Education. (3) I, II. Mr. Brown, Mr. Epperson

Prerequisite: graduate standing and consent of the instructor.

Interdisciplinary approaches to theory and research on the school as a social institution.

229. Mental Health in the Classroom. (2) I, II. Mr. Brown

Prerequisite: graduate standing or consent of instructor.

Principles of mental health. Studies appropriate for counselors, teachers, and school administrators.

258A. Seminar in Curriculum—Reading. (2) I, II. ———

Prerequisite: basic procedures course in the area of specialization; a minimum of one year of teaching experience; consent of the instructor.

Recent developments, review and evaluation of current research in curriculum.

258B. Seminar in Curriculum—Mathematics. (2) I, II. Mrs. Irish, Miss Zweng

Prerequisite: basic procedures course in the area of specialization; a minimum of one year of teaching experience; consent of the instructor.

Recent developments, review and evaluation of current research in curriculum.

258F. Seminar in Curriculum—The Arts. (2) I, II. Mr. Thomas

Prerequisite: basic procedures course in art of music; a minimum of one year of teaching experience; consent of the instructor.

Review of recent experimentation and trends in teaching the arts.

258G. Seminar in Curriculum—Foreign Languages. (2) I, II. Mrs. Delattre

Prerequisite: a basic procedures course in the teaching of a foreign language; a minimum of one year of teaching experience; consent of the instructor.

Recent developments in the teaching of foreign languages; review of the research on foreign language teaching.

259. Seminar in Elementary School Curriculum. (2) I, II. Mrs. Irish

Prerequisite: graduate standing and consent of the instructor. Two years of teaching in elementary schools.

A survey of: (1) curriculum foundations and organization; (2) the curricular areas: language arts, the social studies, arithmetic, science, the arts, health and physical education; (3) evaluation of the curriculum.

260. Seminar—The Creative Process. (2) I, II. Mr. Brown

Prerequisite: Education 207; one year of teaching experience, and consent of the instructor.

A discussion of the research on and theories of creativity. Emphasis will be on psychological process and its implications for educational practice rather than on creative productivity. Examination of works of MacKinnon, Crutchfield, Torrance, Getzels and Jackson, Barron, and others.

280. The Social Psychology of Education. (2) I, II. Mr. Epperson

Prerequisite: graduate standing and consent of the instructor.

Concepts and methods of social psychology as they apply to the professional functions of teachers, administrators, and other persons engaged in education. A study of theory and research on social interaction in an educational setting.

298. Special Studies. (2–4) I, II. The Staff

Prerequisite: graduate standing, evidence of research ability and experience, and consent of the instructor.

Independent research studies in education, with emphasis on the development of originality in the conception and design of research projects.

299. Research. (1–4) I, II. The Staff

Prerequisite: graduate standing and approval of the graduate adviser. Open only to graduate students engaged in writing theses.

Research basic to the thesis for the M.A. in education.

EDUCATION ABROAD PROGRAM

William H. Allaway, Ed.D., *Director.*
Paul M. Pitman, Ed.D., HH.D., *Associate Director.*
Paul O. Proehl, J.D., *Director, Bordeaux Study Center.*
Leonard W. Johnson, Ph.D., *Associate Director, Bordeaux Study Center.*
Leonid M. Tichvinsky, D.E.M., *Director, Goettingen Study Center.*
Thomas L. Broadbent, Ph.D., *Associate Director, Goettingen Study Center.*
Philip W. Powell, Ph.D., *Director, Madrid Study Center.*
John H. R. Polt, Ph.D., *Associate Director, Madrid Study Center.*
David G. Farrelly, Ph.D., *Director, Padua Study Center.*
C. Wayne Shumaker, Ph.D., *Director, Mitaka-Tokyo Study Center.*

The Education Abroad Program, administered for the entire University by the Santa Barbara campus, offers unique opportunities for undergraduate students, regardless of major, to study in selected universities overseas. Five overseas study centers have been established in cooperation with the University of Bordeaux, George August University (Goettingen), the University of Madrid, the University of Padua, and the International Christian University in Mitaka-Tokyo. Consideration is being given to the establishment of additional centers in 1965–66.

THE BORDEAUX STUDY CENTER

The upper division courses listed below are the 1964–65 University of California selections from the regular offerings of the University of Bordeaux.

Economics

BC 109A–109B. Introduction to Economics. (4–4) Yr. Professor Penouil

An introduction to principles of economic analysis, economic institutions and issues of economic policy. Such areas as the allocation of resources, distribution of income through the price system, money and banking, national income and international trade will be emphasized.

BC 112A–112B. The Economic History of Europe. (4–4) Yr.
Professors Schnapper and Minvielle

Survey of the development of the economic institutions of Europe; an analysis of economic problems and policies in their historical setting.

French

BC 101A–101B. Conversation and Composition. (4–4) I. Professor Perrin

Prerequisite: French 4 or equivalent.

Original composition; translation and discussion of selected passages from French literature. Use of films and language laboratory equipment.

BC 102A–102B. Advanced Conversation and Composition. (4–4) I. Professor Perrin

Prerequisite: French 101A–101B, or equivalent.

Original composition; translation and discussion of works of selected French authors on advanced level. Use of films and language laboratory equipment where appropriate.

(Note: French 101A–101B and 102A–102B are taken at the Institute at Pau during September and October.)

BC 112A–112B. French Literature: The Nineteenth Century. (4–4) Yr.
Professor Flottes

Prerequistie: French 101A–101B, or equivalent.

Lectures will treat the works of nineteenth century French literary figures, such as Leconte de Lisle, Zola, and Rimbaud.

BC 120–121. French Literature: The Seventeenth and Eighteenth Centuries. (4–4) Yr. Professor Verniere

Prerequisite: French 101A–101B, or equivalent.

The works of seventeenth and eighteenth century French literary figures, such as Moliere, Le Sage, and LaClos.

BC 132A–132B. Contemporary French Literature. (4–4) Yr. Professor Dulck

Prerequisite: French 101A–101B, or equivalent.

A general introduction to such representative twentieth century French authors as Valery, Proust, Gide, Mauriac, Camus, and others.

Geography

BC 141A–141B. Economic and Political Geography. (4–4) Yr.
Professor Engalbert

Relationships between geography and the study of economic and political problems. Specific topics emphasized will vary each year in accordance with French university custom.

History

BC 102A–102B. History of Europe in the Seventeenth and Eighteenth Centuries. (4–4) Yr. Professor Baure

The history of Europe between the medieval period and the French Revolution, emphasizing political, social, religious, and economic aspects of life. Specific topics considered will vary each year in accordance with French university custom.

BC 113A–113B. History of Europe in the Nineteenth and Twentieth Centuries. (4–4) Yr. Professor Dupeux

History of Europe since the French Revolution emphasizing political, social, religious, and economic aspects of life. Specific topics covered will vary each year in accordance with French university custom.

BC 121–122. Medieval Europe. (4–4) Yr. Professor Guillemain

The history of Europe between the fourth and the fifteenth centuries with an emphasis on political, social, religious, and economic aspects of life. Specific topics covered each year will vary in accordance with French university custom.

Political Science

BC 121A–121B. International Relations. (4–4) Yr. Professor Merle

Contemporary international relations and international institutions. The problems and periods emphasized will vary each year in accordance with French university custom.

BC 125A–125B. Contemporary World Political and Economic Problems. (4–4) Yr. Professor Merle

A grouping of lectures on the current world scene by outstanding scholars.

BC 142A–142B. Government and Politics in France. (4–4) Yr. Professor Merle

Introduction to the social, economic, and political structure of France and to the systems of thought applicable to political studies from both a literary and legalistic point of view.

Sociology

BC 163A–163B. Social Movements. (4–4) Yr. Professor Ellul

Social change and social movements: the development of collective enterprises in politics, religion, and art. The specific topics emphasized each year will vary in accordance with French university custom.

(Note: It is anticipated that the 1964–65 participants will also be able to elect courses in Advanced Mathematics, History of Art, Philosophy, Physical Chemistry, and Physics.)

THE GOETTINGEN STUDY CENTER

The upper division courses listed below are the 1963–64 University of California selections from the regular offerings of George August University, Goettingen. With some additions and substitutions, these courses may be taken by the 1964–65 participants.

Biology

GC 101A–101B. Physiological Chemistry. (5–4) Yr. Professor Deuticke

Prerequisite: Consent of the instructor.

General introduction to metabolism of proteins, carbohydrates, liquids, vitamins, salts, and hormones, with special emphasis on digestion, blood, and excretion from a medical and pathological standpoint.

GC 105A–105B. General Microbiology. (6–5) Yr. Professor Schlegel

Prerequisite: Consent of the instructor.

An introduction to the systematics, physiology, and genetics of the bacteria and fungi and the importance of their activities to man.

GC 105A(L)–105B(L). Microbiology Laboratory. (2–2) Yr. Professor Schlegel

Prerequisite: Biology GC 105A–105B taken concurrently.

Methods of microscopic examination, culture, isolation and identification of bacteria.

GC 136A–136B. Statistics for Biologists, Psychologists and Medical Students. (4–3) Yr. Professor Jacobs

Prerequisite: Consent of the instructor.

Introduction to theory of probability, including distribution, expectation, variance, law of large numbers; statistical methods of proofing hypotheses and evaluations.

Chemistry

GC 112A–112B. Organic Chemistry. (6–6) Yr. Professor Brockmann

Prerequisite: Consent of the instructor.

The classes of organic compounds such as hydrocarbons, alcohols, and aminos are discussed; also vitamins, sugar, alkaloids, and steroids.

GC 112A(L)–112B(L). Organic Chemistry Laboratory. (6–5) Yr. Professor Brockmann

Prerequisite: Consent of the instructor.

The application of theoretical knowledge.

GC 112A(S)–112B(S). Seminar in Organic Chemistry. (1–1) Yr. Professor Brockmann

Prerequisite: Chemistry GC112A–112B taken concurrently.

Bibliographical reports in organic chemistry.

GC 140A–140B. Introduction to Physical Chemistry. (3–2) Yr. Professor Jost
Prerequisite: Consent of the instructor.
Chemical thermodynamics; equilibria and reaction kinetics.

GC 140A(L)–140B(L). Physical Chemistry Laboratory. (3–2) Yr. Professor Jost
Prerequisite: Chemistry GC 140A–140B taken concurrently.
Experiments in chemical equilibrium, molecular structure, chemical thermodynamics, and reaction kinetics.

GC 183A–183B. Reaction Mechanisms. (2–2) Yr. Professor Lüttke
Prerequisite: Consent of the instructor.
Theories of reaction mechanisms in Organic Chemistry (equilibrium, rate process, collision, solvent effects, steric effects).

Economics

GC 104–105. Economic Policy and Economic Theory. (8–6) Yr. Professor Rittig
Economic theory and the application of theory to policy in various aspects of economic life, developed through lectures, seminars, and tutorial discussions.

German

GC 105. Lessing. (4) I. Professor Wölfel
An emphasis on the dramatic of Lessing works. Specific contents will vary from year to year in accordance with German university custom.

GC 106A–106B. German Grammar and Composition. (4–4) I.
Professor Killy, Frau Dr. May
Prerequisite: German 4 or equivalent.
Original composition; translation and discussion of selected passages from German literature; conversation. Highly intensive six weeks preparatory course for students in the Goettingen Center.

GC 112. Seminar on German Nineteenth and Twentieth Century Drama. (5) I, II.
Dr. Böschenstein, Professor Killy
Selected texts from dramas of the nineteenth and twentieth centuries with emphasis on linguistic analysis and determining characteristic dramatic style of author concerned.

GC 125. Seminar on Selected Lyrical Texts. (5) I, II. Herr Schlüer, Professor Schöne
Specific topics to be covered will vary from year to year according to German university custom but will be selected from the whole range of German lyrical production. Emphasis on technical terminology, particularly in metrics, and methods of text analysis.

GC 126. Seminar on Selected Prose Texts. (5) I, II. Professor Killy, Dr. Schillemeit
A selection of prose texts such as Wieland, Goethe, Stifter, and Kafka is to provide the basis for the study and practice in the fundamental concepts of stylistic analysis and the art of narration.

GC 128. Literature of the German Romantic Period. (4) I. Professor Killy
Lecture course on the Literature of the German Romantic period. Specific topics covered will vary from year to year in accordance with German university system.

GC 130A–130B. Advanced German Grammar and Composition. (4–4) I.
Professor Killy, Frau Dr. May
Prerequisite: German 106A–106B or equivalent.
Highly intensive six weeks preparatory course for students in the Goettingen Study Center.

GC 131A–131B. Exercises in German Style. (3–2) Yr. Frau Dr. May
Analysis of composition in terms of style with a special emphasis on needs of foreign students of German philology.

GC 150A. Seminar on the Novels of Wieland. (5) I. Professor Schöne, Herr Stenzel
Methods of interpreting narrative prose and basic techniques in study of German philology. Emphasis on a single novel with a brief survey of literary history.

GC 150B. Seminar on Thomas Mann's "Buddenbrooks." (5) I.
Professor Schöne, Herr Stenzel
An introduction to the main motifs of early works of Mann with regard to content and style; introduces student to methods of prose interpretation and philological techniques.

History

GC 113A–113B. History of Europe in the Nineteenth and Twentieth Centuries. (6–4½) Yr. Professor Nürnberger
History of Europe since 1800. Specific topics to be covered will vary each year in accordance with German university custom.

GC 113C–113D. Seminar in Modern European History. (5–3½) Yr. The Staff
Seminar on various aspects of European history of the nineteenth and twentieth centuries. The specific topics covered vary each year in accordance with German university custom.

GC 121–122. Medieval Europe. (5–3½) Yr.
Professor Heimpel
History of medieval Europe (300 A.D.–1350 A.D.). Specific topics to be covered will vary each year in accordance with German university custom.

GC 145A–145B. History of Early Mercantilism. (5–4) Yr. Professor Treue
Prerequisite: Consent of the instructor.
Lectures, seminar, and independent study in the economic history of Europe in the seventeenth and eighteenth centuries.

Mathematics

GC 115A–115B. Algebraic Number Theory. (6–5) Yr. Professor Maak
Prerequisite: Consent of the instructor.
Elementary theory of numbers; integral quadratic forms (Zahlenkoerper).

GC 126A–126B. Introduction to Topology. (2–2) Yr. Professor Jacobs
Prerequisite: Consent of the instructor.
Properties of Topological Spaces.

GC 139A–139B. Programming in ALGOL. (1–1) Yr. Professor Grohne
Prerequisite: Consent of the instructor.
Introduction to programming in the ALGOL Compiler Language.

Music

GC 175A–175B. Selected Problems in Bach Philology. (4–3) Yr. Professor Dürr
Prerequisite: Consent of the instructor.
Philological study of selected works of J. S. Bach, comparing original manuscripts with copies.

GC 176A–176B. The German Lied from Schubert to Brahms. (3–2) Yr. Professor Boetticher
Prerequisite: Consent of the instructor.
A study in depth of the German Lied from Shubert to Brahms, including Hugo Wolf.

Philosophy

GC 187A–187B. Logic, Language and Reality. (3–3) Yr. Professor Patzig
Prerequisite: Consent of the instructor.
Study of the development, meaning, and interrelationship of logic, language, and reality.

Physics

GC 113A(L)–113B(L). Advanced Physics Laboratory. (2–2) Yr. Professor Flammersfeld
Prerequisite: Consent of the instructor.
Includes such experiments as electron diffraction, Wilson chamber, Franz Herz, x-ray diffraction, and optics.

GC 114A–114B. Theory of Electricity. (5–5) Yr. Professor Lüders
Prerequisite: Consent of the instructor.
Electromagnetic phenomena with emphasis on physical concepts; introduction to mechanics, vector-analysis, electrostatic fields in empty space and isolators, induction phenomena, and application of Maxwell's theory to magnetic fields.

GC 114A(S)–114B(S). Theory of Electricity (Seminar). (1–1) Yr. Professor Lüders
Prerequisite: Physics GC 114A–114B taken concurrently.

GC 124A–124B. Introductory Nuclear Physics. (2–2) Yr. Professor Flammersfeld
Prerequisite: Calculus and consent of the instructor.
Radioactivity, elementary particles, and nuclear reactions.

GC 125A–125B. Neutron Physics. (2–2) Yr. Professor Schmidt-Ott
Prerequisite: Consent of the instructor.
The discovery of the neutron; its magnetic moment, interaction with nuclei, and decay.

Political Science

GC 134A–134B. Contemporary World Politics. (4–3) Yr. Professor Leibholz
A study of the different forms that democracy can take in the contemporary world situation.

GC 140A–140B. The Theory of Politics. (7–5) Yr. Professor Seidel
Problems concerning the nature and influence of state bureaucracy. The bureaucracy of pressure groups and political parties, party idealogies, and major twentieth century developments will be discussed, particularly as they effect Germany.

Sociology

GC 188A–188B. Analysis of Contemporary Society. (7–5) Yr. Professor Bahrdt
The role of such factors as science, technology, industrialization and bureaucracy; developed through lectures, seminars, and tutorial discussions.

THE MADRID STUDY CENTER

The University of California Study Center, Madrid will open in fall, 1964. Each participant will elect a program of courses from among those regular offerings of the University of Madrid which will have been selected by the University of California, Santa Barbara. Emphasis will be placed on courses in the humanities and the social sciences.

THE PADUA STUDY CENTER

The upper division courses listed below are the 1963–64 University of California selections from the regular offerings of the University of Padua. With some additions and substitutions these courses may be taken for academic credit by the 1964–65 partcipants.

Anthropology

PC 103A–103B. Prehistorical Civilizations. (5–5) Yr. Professor Polacco
Course will vary in specific content from year to year according to the Italian university system.

Art

PC 108A–108B. Italian Renaissance Art. (4–4) Yr. Professor Pallucchini
Course which will deal intensively with particular aspects of the general subject cited but will vary in specific content from year to year according to the Italian university system.

Classics

PC 100A–100B. Greek Language and Civilization. (4–4) Yr. Professor Zadro

Greek Civilization, including development of the arts, science and literature; an intensive period of Greek history; basic language requirements which will enable the student to understand the development of the Greek language and original passages he will encounter. Content will vary from year to year in accordance with Italian university custom.

History

PC 109A–109B. Ancient History. (4–4) Yr. Professor Sartori

A course in ancient history which will deal intensively with particular aspects of the general subject cited but will vary in content from year to year.

PC 113A–113B. History of Europe in the Nineteenth and Twentieth Centuries. (4–4) Yr. Professor De Rosa

Course which will deal intensively with particular aspects of the general subject cited but will vary in specific content from year to year according to the Italian university system. Emphasis on contemporary history, preparing students of politcal science for advanced studies.

PC 125A–125B. History of Europe from the Renaissance to the Nineteenth Century. (4–4) Yr. Professor Seneca

Course which will deal intensively with particular aspects of the general subject cited but will vary in content from year to year.

Italian

PC 101A–101B. Grammar, Composition and Conversation. (4–4) I. Professor Policardi

Prerequisite: Italian 4 or equivalent.

Original composition; translation and discussion of selected passages from Italian literature; conversation; lectures on Italian language and literature. Highly intensive six weeks preparatory course for students in the Padua Center.

PC 130A–130B. Advanced Grammar, Composition and Conversation. (4–4) I. Professor Policardi

Prerequisite: Italian 101A–101B or equivalent.

An emphasis on original composition, grammar review and analysis in greater depth, conversation, and lectures on Italian language and literature. Highly intensive six weeks preparatory course for students in the Padua Center.

PC 160A–160B. Italian Philology and Criticism. (5–5) Yr. Professor Branca

Currents of criticism and philology for Italian literature. Content of course will vary from year to year in accordance with Italian university custom.

Political Science

PC 125A–125B. History of Treaties and International Policy. (5–5) Yr. Professor Anchieri

Course which will deal intensively with particular aspects of the general subject cited but will vary in specific content from year to year. Study of basic documents.

Speech and Dramatic Art

PC 163A–163B. Development of the European Theater. (2–2) Yr. Professor d'Arcais

History of the European theater and its drama from medieval times to the present, including history of Italian cinema and a study of the problems of theatrical performance. Specific content will vary annually, according to the Italian university system.

THE TOKYO STUDY CENTER

The University of California Study Center, Mitaka-Tokyo, will open in fall, 1964. Each participant will elect a program from among the wide range of courses in the humanities, natural sciences, and social sciences which are regularly offered by International Christian University in the English language. While knowledge of the Japanese language is not required for participation, the University of California participants will be encouraged to include the study of Japanese in their programs.

EDUCATIONAL ARTS AND CRAFTS

Clyde Keener, Ed.D., *Lecturer in Educational Arts and Crafts.*
Louie S. Taylor, Ed.D., *Lecturer in Educational Arts and Crafts.*

There is no major in Educational Arts and Crafts. The courses listed below are service courses for certain types of teaching credentials. The program is under the direction of the Dean of the College of Letters and Science.

Lower Division Course

45. Expressive Craft Activity for Elementary Schools. (2) I, II. Mr. Keener
Lecture, one hour; laboratory, three hours.

Upper Division Course

145. Integrated Craft Activities for Elementary Schools. (2) I, II. Mr. Taylor
Lecture, one hour; laboratory, three hours.

ENGINEERING

Electrical Engineering

Stephen J. Angello, Ph.D., *Professor of Electrical Engineering.*
Albert G. Conrad, E.E., *Professor of Electrical Engineering (Dean of the School of Engineering).*
George L. Matthaei, Ph.D., *Professor of Electrical Engineering.*
Philip F. Ordung, D.Eng., *Professor of Electrical Engineering (Chairman of the Department of Electrical Engineering).*
Augustine H. Gray, Ph.D., *Assistant Professor of Electrical Engineering.*
Glenn R. Heidbreder, D.Eng., *Assistant Professor of Electrical Engineering.*
Clive D. Leedham, Ph.D., *Assistant Professor of Electrical Engineering.*

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Arthur M. Cowley, M.S., *Acting Assistant Professor of Electrical Engineering.*
Joseph J. Sayovitz, Ph.D., *Lecturer in Electrical Engineering.*

Mechanical Engineering

Otto W. Witzell, Ph.D., *Professor of Mechanical Engineering.*
H. Karl Ihrig, Ph.D., *Assistant Professor of Mechanical Engineering.*

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Richard A. Matula, M.S., *Acting Assistant Professor of Mechanical Engineering.*

Engineering Mechanics

Kenneth R. Bockman, Ph.D., *Assistant Professor of Engineering Mechanics.*

PROGRAMS

The curricula offered in 1964–65 by the School of Engineering will be essentially in the Electrical and Mechanical areas. These programs will be presented at all undergraduate levels and to a limited degree at the graduate level. Chemical Engineering will be admitted in the lower division and transfer students can be considered in these three areas for the coming year.

In preparing programs a student must plan to take all courses in his departmental major and those requirements in General Education.

Electrical Engineering

Required for the major—(40 units in lower division): EM 1A–1B, EE 1A–1B, Chemistry 1A–1B, Mathematics 3A–3B, Mathematics 4A–4B, and Physics 4B–4C.

The major—(39 units of upper division courses): EE 130A–130B, 136A–136B, 139A–139B, 143A, 147, and ME 105. An additional 12 units to be selected from the following list: EE 143B, 144, 146A–146B, 150, 151.

Mechanical Engineering

Required for the major—(40 units in lower division): EM 1A–1B, EE 1A–1B, Chemistry 1A–1B, Mathematics 3A–3B, 4A–4B, Physics 4B–4C.

The major—(39 units of upper division courses) including: EE 130A–130B, EM 101, ME 151A–151B, 152, and 153.

Engineering

Lower Division Course

EM 1A–1B. Engineering Mechanics. (3–3) Yr. Mr. Bockman, The Staff

Lecture, three hours.

An introduction to the principles of mechanics and its application to the solution of engineering problems. Emphasis will be placed on the physical and mathematical formulation and interpretation of the subject as they apply to statics and dynamics.

Upper Division Course

EM 101. Introduction to Mechanics of Solids. (3) II. Mr. Bockman

Lecture, three hours. Prerequisite: EM 1A–1B and Mathematics 4B or equivalent courses.

The basic principles of solid mechanics with applications to the design of structural members. Mechanical properties of structural materials, description of stress and strain, Hooke's law, and the problems of tension, torsion, flexure, and combined loading.

Electrical Engineering

Lower Division Course

EE 1A–1B. Fields and Circuits. (3–3) Yr. Mr. Leedham

Lecture, two hours; laboratory, three hours. Concurrently with Mathematics 4A–4B and Physics 4B–4C.

Principles of electric and magnetic fields, direct-current circuits and machines and alternating-current circuits.

Upper Division Courses

EE 130A–130B. Engineering Analysis. (3–3) Yr. Mr. Heidbreder

Lecture, three hours. Prerequisite: Mathematics 4A–4B; Physics 4B–4C; EE 1A–1B, or consent of the instructor.

Coordination of previous work in mathematics, mechanics and physics with electrical engineering. A study of mathematical and physical principles applicable to engineering.

EE 136A–136B. Electronics. (3–3) Yr. The Staff

Lecture, two hours; laboratory, three hours. Prerequisite: Mathematics 4B, EE 1B, or equivalent.

A study of semi-conductor devices and tubes.

EE 139A–139B. Network Theory. (3–3) Yr. Mr. Ordung

Lecture, two hours; laboratory, three hours. Prerequisite: Mathematics 4B, Physics 4C, EE 1B or equivalent.

A study of network properties and solutions by classical and transformation methods.

EE 143A–143B. Alternating-Current Machinery. (3–3) Yr. Mr. Conrad

Lecture, two hours; laboratory, three hours. Prerequisite: EE 139A–139B, or consent of the instructor.

Principles of alternating-current machinery. Transformers, induction-machinery, synchronous machines, power converter, adjustable-speed drives.

EE 144. Microwave Devices. (3) I, II. The Staff

Lecture, two hours; laboratory, three hours. Prerequisite: EE 136A–136B, or equivalent.

Theory of microwave generation, amplification, transmission radiation and measurement.

EE 146A–146B. Communication Circuits Systems. (3–3) Yr. The Staff

Lecture, two hours; laboratory, one hour. Prerequisite: EE 139A–139B, or consent of the instructor.

Transient and steady state behavior of reactance networks, filters impedance transforming networks, lumped-parameter and distributed-parameter systems studied by means of Fourier and Laplace transformations.

EE 147. Automatic Control Systems. (3) II. Mr. Leedham

Lecture, two hours; laboratory, three hours. Prerequisite: EE 130A–130B, EE 139A–139B.

The theories of feedback systems as developed by Nyquist, Bode, Root, Locus. Study of stability criteria; design of corrective networks, electric and hydraulic components; nonlinear systems, random input systems.

EE 150. Computer Engineering. (3) I, II. The Staff

Lecture, two hours; laboratory, three hours. Prerequisite: EE 136A–136B, EE 139A–139B, or consent of the instructor.

A study of analog and digital computing systems. The application of mathematical logic to the design of switching systems.

EE 151. Non-Linear Magnetics. (3) II. The Staff

Lecture, two hours; laboratory, three hours. Prerequisite: EE 136A–136B, EE 139A–139B, or consent of the instructor.

A study of the properties of saturable magnetic cores and their associated circuits with emphasis on the domain theory of magnetization and the resulting electric-circuit properties of the reactors.

Mechanical Engineering

Upper Division Courses

ME 105. Thermodynamics. (3) II. Mr. Ihrig

Lecture, three hours. Prerequisite: Engineering Mechanics and Mathematics of the Lower Division of the engineering curriculum.

Energy, availability of energy, energy transformations, properties of media and heat transfer.

ME 151A–151B. Thermodynamics and Thermal Systems. (3–3) I, II. Mr. Ihrig

Lecture, three hours. Prerequisite: Engineering and Physics courses of the Lower Division, or the equivalent.

Principles of thermodynamics, energy and energy transformations, properties of media, availability of energy, cycles, and general thermodynamical relationships.

ME 152. Fluid Mechanics. (3) I. The Staff

Lecture, three hours. Prerequisite: lower division courses in Engineering, Physics and Mathematics, or consent of the instructor.

Introduction to the fundamentals of the flow of real and ideal fluids; hydrodynamics; analysis of flow problems, including mass and heat addition, and compressibility.

ME 153. Heat Transfer. (3) II. The Staff

Lecture, three hours. Prerequisite: lower division courses in Engineering and Physics.

The study of the fundamentals of heat transfer

using the phenomena of conduction, radiation and convection; application and analysis of steady state, transient, and combined mode problems.

ME 155. Introduction to Vibrations. (3) I. The Staff

Lecture, three hours. Prerequisite: EM 1A–1B, EE 1A–1B, EE 130A–130B, EM 101.

Vibrations in systems of single and multiple degrees of freedom. Impulse and step response. Application to critical speeds, measuring instruments, vibration isolation and torsional systems.

ME 156A–156B. Engineering Design. (3–3) I, II. The Staff

Lecture, two hours; laboratory, three hours.

Prerequisite: EM 1A–1B, EE 1A–1B, courses in Mechanical Engineering of the junior level or the equivalent.

Fundamentals of design with particular emphasis on the synthesis concept definition, data determination, solution techniques including feasibility and optimization, component design.

ME 157. Measuring and Computing Devices. (3) I. The Staff

Lecture, two hours; laboratory, three hours.

Prerequisite: courses of the lower division of the Engineering curriculum.

Characterization and behavior of typical measuring devices. Transfer functions and frequency response. Transducers, computing devices, readout equipment and their response to steady and transient phenomena. Introduction to digital and analog computation.

ME 158. Kinetic Theory and Statistical Thermodynamics. (3) II. The Staff

Lecture, three hours. Prerequisite: ME 151A–151B.

Kinetic Theory, Maxwell Boltzman equilibrium distribution, specific heat, transport properties, quantum statistics.

ME 159. Fundamentals of Engineering Materials. (3) II. The Staff

Lecture, three hours. Prerequisite: Engineering, Mathematics, Physics, and Chemistry courses of the lower division of the Engineering program.

The interrelation between physical properties, environment and structure of engineering materials. Interatomic forces, phase equilibria, crystal structure, energy bands, imperfections, boundaries, corrosion, high strength and high temperature materials.

ME 160. Gas Dynamics. (3) II. The Staff

Lecture, two hours; laboratory, three hours.

Prerequisite: ME 151A–151B, ME 152.

Adiabatic and diabatic flow of gases, chemically reacting systems, non equilibrium gas flow, the plasma state, magnetic and electric effects on a flowing gas stream.

ENGLISH

Phillip W. Damon, Ph.D., *Professor of English (Chairman of the Department).*
Joseph Foladare, Ph.D., *Professor of English.*
William Frost, Ph.D., *Professor of English.*
Earl L. Griggs, Ph.D., D.Lit. (London), *Professor of English.*
*George Hand, Ph.D., *Professor of English.*
**Hugh Kenner, Ph.D., F.R.S.L., *Professor of English.*
***J. Chesley Mathews, Ph.D., *Professor of English.*
Marvin Mudrick, Ph.D., *Professor of English.*
Donald R. Pearce, Ph.D., *Professor of English.*
***Lawrence Willson, Ph.D., *Professor of English.*
Edgar Bowers, Ph.D., *Associate Professor of English.*
Genevieve W. Haight, M.A., *Associate Professor of English.*
*Edward W. Loomis, Ph.D., *Associate Professor of English (Vice-Chairman of the Department).*
Robert E. Robinson, Ph.D., *Associate Professor of English.*
Douwe Stuurman, M.A., B.Litt. (Oxon.), *Associate Professor of English.*
Alan Stephens, Ph.D., *Associate Professor of English.*
Homer D. Swander, Ph.D., *Associate Professor of English.*
Lee F. Gerlach, Ph.D., *Assistant Professor of English.*
William S. Marks III, Ph.D., *Assistant Professor of English.*
N. Scott Momaday, Ph.D., *Assistant Professor of English.*
John M. Ridland, Ph.D., *Assistant Professor of English.*
**Benjamin T. Sankey, Ph.D., *Assistant Professor of English.*
Ann E. Wilkinson, Ph.D., *Assistant Professor of English.*

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Elisabeth Schneider, Ph.D., *Visiting Professor of English.*
Martha Banta, M.A., *Acting Assistant Professor of English.*
Ellen L. Hurt, M.A., *Acting Assistant Professor of English.*
Stoddard Malarkey, M.A., *Acting Assistant Professor of English.*
Kathleen L. Smith, M.A., *Acting Assistant Professor of English.*
John M. Barnard, B.Litt. (Oxon.), *Lecturer in English.*
Eileen A. Pidgeon, M.A., *Lecturer in English.*
Yvonne P. Schoell, M.A., *Associate in English.*

Literature deals in specific human experience which is neither dated in time nor localized in place. Some acquaintance with literature, and some trained ability to become further acquainted with it, provide the civilized human being with nutriment he can obtain in no other way. The Department of English (1) provides all undergraduates with the opportunity for guided literary study, through the 1A and 1B courses; (2) makes available to all students a wide range of courses that may be taken for credit as electives; (3) offers a major leading to the Bachelor of Arts degree and (4) offers graduate programs leading to the M.A. and Ph.D. degrees.

The English major pursues a planned program of English courses and cognate studies from which he can acquire a sound and orderly knowledge of our literature and the wisdom and exhilaration available in it, as well as a poised critical sense and some ability in graceful and efficient expression.

Preparation for the Major

To prepare for the major the student must pass courses 1A–1B, 35, and 38A with an average grade of C or higher, and History 4A–4B.

* Absent on leave, 1964–65.
** In residence spring semester only, 1964–65.
*** Sabbatical leave in residence spring 1965.

The Major

For his upper division program, the student must take twenty-four units in the following courses, as far as possible in the order listed: English 117A, 158 (or 159 or 160 or 161), 162, 125 (or 168 or 169 or 170 or 171), 152, 178 (or 179 or 126), 136 (or 137 or 138 or 139) and 147 (or 148 or 153 or 154).

He must also enroll in two semesters of the Comprehensive Survey, beginning in the first semester of his senior year, as follows: English 197A–197B for 4 units.

Students who had commenced working toward an English major before the above requirements came into effect (July, 1960) may substitute, without penalty, courses now available for courses formerly required. Similarly, students who have already taken courses formerly required for the English major but no longer listed here will be able to substitute them for comparable courses in the above list. Each substitution requires the faculty adviser's approval.

English literature has been constantly fertilized by that of the Continent, and ability to read at least one continental language is essential for understanding the procedures of English writers. Each student must complete French 4, German 4, Greek 4, or Latin 4, or demonstrate equivalent knowledge of one of these languages by passing an examination. Another language may be substituted with the consent of the chairman. Undergraduates contemplating graduate study in English should consult the graduate adviser concerning the foreign language requirements for the M.A. and Ph.D. degrees, and should prepare to satisfy them.

History 153B (History of England) is strongly recommended for all English majors.

The Minor

Twenty units are required: English 1A–1B, 46A–46B or 102A–102B, 130, and 5 units of English electives.

HIGHER DEGREES

For information concerning the M. A. and Ph.D. programs, consult the *Announcement of the Graduate Division, at Santa Barbara,* and confer with the Departmental Graduate Adviser.

Teaching Credentials

Either a major or a minor in English may serve as an appropriate part of the program of studies required for an elementary, secondary, or junior college teaching credential in California.

For the various teaching credentials, requirements in addition to the major specified above are as follows: (1) Elementary: English 106G; (2) General Secondary and Junior College: English 106G and 110, and six units in upper division or graduate courses in English taken after the award of the B.A.

ENGLISH

Lower Division Courses

1A–1B. First-Year Reading and Composition. (3–3) Yr. Beginning either semester. The Staff

Prerequisite: satisfaction of Subject A requirement. English 1A–1B is prerequisite to all other courses in English.

1A. Intensive reading in selected literary masterpieces, accompanied by practice in composition.

1B. Further training in intensive reading and expository writing.

35. Introduction to the Study of Poetry. (3) I, II. The Staff

36. Introduction to the Novel. (3) I, II. The Staff

Close reading and discussion of selected masterpieces of fiction.

37. Introduction to Drama. (3) II. The Staff

Close reading and discussion of selected masterpieces of drama, ancient and modern.

38A. World Literature. (3) I, II. The Staff

Close reading in translation of selected ancient authors, such as Homer, the Greek dramatists, Plato, Virgil.

38B. World Literature. (3) I, II. The Staff
Close reading in translation of selected medieval, Renaissance and 18th century authors, such as Dante, Cervantes, Voltaire.

41A–41B. Creative Writing. (3–3) Yr.
Mr. Hand
Writing in forms chosen by the student, such as autobiography, essay, one-act play, short story, and verse. 41A is not prerequisite to 41B.

46A–46B. Survey of English Literature. (3–3) Yr. The Staff
46A is not prerequisite to 46B.

48. Modern Continental Literature. (3) I, II.
Mr. Momaday
Reading, in translation, of such writers as Camus, Proust, Flaubert, Dostoyevsky, Tolstoy, Rilke, Kafka, Lorca, and Valery.

Upper Division Courses

102A–102B. Major British Writers. (3–3) Yr.
Mr. Robinson
May not be taken if student has completed English 46A–46B.
Pivotal authors from Chaucer to the present, in a sequence designed for students who require a literary survey course in the upper division. 102A: Chaucer to Pope. 102B: Johnson to Eliot. 102A is not prerequisite to 102B.

103. Writing of Fiction. (3) I, II.
Mr. Loomis, Mr. Mudrick
Prerequisite: consent of instructor.
May be repeated for credit up to 12 units.

104. Writing of Verse. (3) I, II.
Mr. Bowers, Mr. Stephens
Prerequisite: consent of instructor.
May be repeated for credit up to 12 units.

106G. Problems of Composition. (3) I, II.
The Staff

110. The Development of the English Language. (3) I, II. Mr. Damon
Historical study of the structure and vocabulary of English; cultural implications of linguistic process; introduction to methods of linguistic analysis.

113. Literary Theory and Criticism. (3) I.

Prerequisite: English 35, or equivalent, or consent of the instructor.
Exploration of the critic's methods and objectives; study of selected major critical documents from Aristotle to the present.

116. The English Bible as Literature. (3) I, II.
Mr. Stuurman

117A. Shakespeare. (3) I, II. Mr. Swander

117B. Shakespeare. (3) II. Mr. Swander
Prerequisite: English 117A or 117E or consent of instructor.
Advanced studies in Shakespeare.

117E. Shakespeare. (3) I, II. The Staff
Primarily for non-majors.

120. Modern Drama. (3) II. Mr. Pearce
European and American drama from Ibsen to the present.

124. Readings in the Modern Short Story. (3) I, II. Mr. Malarkey

125. Eighteenth-Century Fiction. (3) I.
Mr. Mudrick, Mrs. Wilkinson
Defoe, Richardson, Fielding, Smollett, Sterne.

126. Nineteenth-Century Fiction. (3) II.
Mr. Mudrick
Austen, Emily Brontë, Dickens, Thackeray, Trollope, Hardy, George Eliot, and others.

130. Survey of American Literature. (3) I, II.
Mr. Mathews, Mr. Willson
Hawthorne, Emerson, Melville, Whitman, Henry James.

***132. Studies in American Literature.** (3) I.
Mr. Willson
Main developments in American thought studied in the writings of Edwards, Franklin, Emerson, and others.

***135. The Puritan Tradition in American Literature.** (3) I. Mr. Willson
The development of the main ideas of American Puritanism; discussion of Henry Adams, Thoreau, Henry James, Santayana and other modern exponents of the tradition; the survival of Puritan elements and attitudes in contemporary literature.

136. American Prose until 1900. (3) I.
Mr. Willson
Writers of nonfictional prose, such as Mather, Edwards, Emerson, Thoreau, Henry Adams.

137. American Verse until 1900. (3) I, II.
Mr. Mathews, Mr. Stephens
Poets such as Taylor, Bryant, Whittier, Longfellow, Poe, Emerson, Whitman, Dickinson.

138. American Fiction until 1900. (3) I, II.
Mr. Mathews
Cooper, Hawthorne, Melville, Poe, Twain, James, and others.

139. American Fiction since 1900. (3) II.
Mr. Loomis, Mr. Willson
Faulkner, Hemingway, Norris, Dreiser, Crane, and others.

142. Dante in English Translation. (3) I.
Mr. Mathews
Reading of the *Divine Comedy*.

146. Renaissance. (3) II.
An historical survey of the literature and social background of England between 1500 and 1660.

* Not to be given, 1964–65.

147. British Fiction since 1900. (3) I. ———
Conrad, Bennett, Lawrence, Forster, Woolf, and others.

148. The Flaubertian Tradition in Fiction. (3) I. Mr. Kenner
Ford Madox Ford, Wyndham Lewis, James Joyce.

151. Senior Studies. (3) I, II. The Staff
Designed primarily for seniors whose major subject is English, but open to qualified upperclassmen in other majors. (151D, Donne and Jonson; 151Dr, Dryden; 151F, Faulkner; 151J, Samuel Johnson; 151Ja, Henry James; 151L, Lawrence; 151P, Pope; 151S, Spenser; 151Sw, Swift; 151Sy, The Symbolist Movement; 151W, Wordsworth; 151Y, Yeats; etc.)

152. Chaucer. (3) I, II.
Mr. Damon, Mr. Mudrick
A reading course beginning with *Troilus and Criseyde* and including the *Canterbury Tales.*

153. Yeats, Pound, Eliot. (3) II.
Mr. Kenner, Mr. Pearce
Prerequisite: English 35 or consent of the instructor.

154. British and American Verse since 1900. (3) I. Mr. Bowers, Mr. Stephens
Bridges, Housman, Hardy, Robinson, Yeats, Stevens, Eliot, Pound, Williams, and others.

158. Prose of the English Renaissance. (3) I.
Mr. Sankey
Major prose writers of the sixteenth and seventeenth centuries, such as More, Lyly, Sidney, Burton, Bacon, Browne, Hooker.

159. Tudor Verse. (3) I.
Mr. Bowers, Mr. Stephens
Nondramatic verse of such writers as Skelton, Wyatt, Spenser, Shakespeare, Marlow, Donne, Jonson.

160. Stuart Verse. (3) II. Mr. Bowers
The song writers, the cavaliers, the metaphysicals.

161. Drama of the English Renaissance. (3) I.
Mr. Pearce, Mr. Swander
Marlowe, Jonson, Webster, and others.

162. Milton. (3) I, II. Mr. Frost, Mr. Hand

168. Restoration and Eighteenth-Century Nonfiction Prose. (3) II.
Mr. Frost, Mr. Hand
Such writers as Dryden, Addison, Steele, Swift, Johnson.

169. Restoration and Eighteenth-Century Drama. (3) I. Mr. Frost
Such dramatists as Dryden, Etheredge, Wycherly, Congreve, Sheridan.

170. English Satire. (3) I.
Mr. Hand, Mr. Kenner
Donne, Rochester, Dryden, Swift, Pope, Johnson.

171. Restoration and Eighteenth-Century Verse. (3) II. Mr. Foladare
Such poets as Dryden, Pope, Johnson, Cowper, Burns, Blake, Crabbe.

178. Nineteenth-Century Prose. (3) I, II.
Mr. Robinson
Nonfiction prose writers of the Romantic and Victorian periods, such as Coleridge, Hazlitt, Arnold, Carlyle.

179. Nineteenth-Century Verse. (3) I.
Mr. Pearce
Poets of the Romantic and Victorian periods.

184. Studies in Modern European Literature. (3) I, II. Mr. Stuurman
The mood of writers like Kafka and Camus is traced back by way of Proust to its beginnings in the nineteenth century, especially to its first statement in the writings of Dostoyevsky.

189. Children's Literature. (3) I, II.
Mrs. Haight
Restricted to credential candidates.
Extensive readings; building of literary understanding in children; principles underlying the choice of literature for different age levels.

SE 190. Problems in Teaching English Literature and Composition in the Secondary Schools. (2) I. Mrs. Haight
Prerequisite: senior or graduate standing.
This course is designed for senior and graduate students undertaking a teaching major or minor in English, and should be completed before student teaching. The course is required of candidates for the general secondary credential with a major in English, and is accepted in partial satisfaction of the 24-unit requirement in education for the credential.

194A–B–C–D. Group Studies for Advanced Students. (1–4) I, II. The Staff

197A–197B. Comprehensive Survey. (2–2) I, II. The Staff
An undergraduate seminar which provides the student with opportunities for more detailed and illuminating investigation of literary works in a long cultural perspective.

199. Independent Studies in English. (1–4) I, II. The Staff
Reading and conference for seniors of high scholastic standing.

Graduate Courses

208. Problems in the Study of Literature. (3) I. Mr. Hand
Prerequisite: graduate standing.

212. Old English Literature. (3) II.
Mr. Damon

***216. Creative Writing.** (3) II. Mr. Loomis

* Not to be given, 1964–65.

***220. Structure and History of the English Language.** (3) I. ———

***230. Readings in Medieval Literature.** (3) I. Mr. Damon

***234. Readings in Renaissance Literature.** (3) II. Mr. Bowers, Mr. Swander

238. Readings in Milton and the Metaphysical Poets. (3) I. Mr. Frost

242. Readings in Restoration and Eighteenth Century Literature. (3) II. Mr. Foladare, Mr. Frost, Mr. Hand

246. Readings in Romantic and Victorian Literature. (3) I. Mr. Griggs, Mr. Pearce, Mr. Robinson

250. Readings in Twentieth Century British and American Literature. (3) II. Mr. Kenner

***260. Seminar in the English Lyric.** (3) II. Mr. Stephens

264. Seminar in Nineteenth Century Prose Fiction. (3) II. Mr. Mudrick

266. Seminar in Wordsworth and Coleridge. (3) I. Miss Schneider

268. Seminar in American Literature. (3) I. Mr. Mathews, Mr. Willson

298. Special Studies. (1–4) I, II. The Staff
Prerequisite: graduate standing and consent of instructor.

299. Directed Research. (1–6) I, II. The Staff
Prerequisite: graduate standing and consent of instructor.

Related Course in Another Department

Education SE 192A–192B. Student Teaching: English. (2–2) I, II. Mrs. Haight
Prerequisite: SE 190 and admission to student teaching.

* Not to be given, 1964–65.

FOREIGN LANGUAGES AND LITERATURES

*William F. Aggeler, Ph.D., *Professor of French.*
Pierre Delattre, Ph.D., *Professor of French.*
Harry Steinhauer, Ph.D., *Professor of German (Chairman of the Department).*
Robert Beachboard, Docteur de l'Université de Paris, *Associate Professor of French.*
Rolf N. Linn, Ph.D., *Associate Professor of German..*
**Edmond E. Masson, Ph.D., *Associate Professor of French and Russian.*
Mark J. Temmer, Ph.D., *Associate Professor of French.*
Chauncey S. Goodrich, Ph.D., *Assistant Professor of Classical Chinese.*
Gunther H. Gottschalk, Ph.D., *Assistant Professor of German.*
Anne H. Greet, Ph.D., *Assistant Professor of French.*
Ursula R. Mahlendorf, Ph.D., *Assistant Professor of German.*
Jack Murray, Ph.D., *Assistant Professor of French.*
Jacqueline R. van Baelen, Ph.D., *Assistant Professor of French.*
**Philip D. Walker, Ph.D., *Assistant Professor of French.*

Jan L. Perkowski, M.A., *Acting Assistant Professor of Soviet Literature.*
Constantine P. C. Tung, M.A., *Acting Assistant Professor of Chinese.*
Douglas R. Umstead, Ph.D., *Acting Assistant Professor of Italian.*
Susan M. Walsh, M.A., *Acting Assistant Professor of French.*
William F. Holtrop, Ed.D., *Lecturer in German.*

The Major in French

Preparation for the major—courses 1, 2, 3, or four years of high school French, and course 4, or other equivalent to be tested by examination. If course 4 is passed with a grade lower than B, the student must complete course 25A–25B as prerequisite to upper division courses.

Students who wish to make French their major subject must have maintained at least an average grade of C in the college courses in French taken prior to their junior year. Students transferring from other institutions may be tested by examination.

Students whose native language is French will not be permitted to enroll in any French course lower than 25A–25B.

The Major. 24 units in upper division with 12 units in French 101A–101B (may be omitted if 25A–25B has been passed with a grade of A or B), French 109A–109B required, plus the remaining units completed from: French 103A–103B, 112A–112B, 118A–118B, 120A–120B, 121A–121B, 125A–125B, 130A–130B, 132A–132B.

Teaching Credentials

A major in French may serve as an appropriate part of the program of studies required for an elementary, secondary, or junior college teaching credential in California. The teaching major includes French 103A–103B, 125A–125B, 130A–130B, among the requirements for the major specified above.

The minor in French is applicable toward any teaching credential under the California Education Code. For further information concerning teaching majors and minors the student should confer with designated counselors in French and in the School of Education.

The Minor in French, German, Russian

A minimum of 20 units in the chosen language is required; of these, 9–12 units must be in the upper division, which must include, respectively, French 101A–101B, German 106A or 106B. The minor in Russian, in addition to Russian 1, 2, 3, 4 and Russian 115A–115B, requires at least one unit of Russian 198. History 150, History of Russia, is strongly recommended for this minor.

* Absent on leave 1964–65.
** Absent on leave, spring 1965.

The Master of Arts Degree in French

Requirements for the Master's degree in French. A candidate for the Master's degree must present 24 units of work of which a minimum of 12 units must be in graduate courses. The remaining 12 units may be selected from upper division courses not taken previously as an undergraduate. A candidate's graduate courses may include work in 298 courses in connection with which the candidate may be asked to attend relevant undergraduate courses while working on his 298 project.

No thesis is required for the Master's degree in French. Comprehensive written and oral examinations in language and literature are required.

The Major in German

Preparation for the major—courses 1, 2, 3, or four years of high school German, and course 4, or other equivalent to be tested by examination. If course 4 is passed with a grade lower than B, consent of the department will be prerequisite to enrollment in upper division courses.

Students who wish to make German their major subject must have maintained an average grade of at least C in the college courses in German taken prior to their junior year. Students transferring from other institutions may be tested by examination.

Students whose native language is German will not be permitted to enroll in any lower division course in German.

The Major. Twenty-four upper division units required with 9 units in German 106A–106B, and 118A or 119. The remaining units may be completed from the following courses: German 104A, 105, 108, 109B, 110, 111, 114A, 118B, 132.

Teaching Credentials

A major in German may serve as an appropriate part of the program of studies required for an elementary or a secondary teaching credential in California. The minor in German is applicable toward any teaching credential.

For further information concerning teaching majors and minors the student should confer with designated counselors in German and in the School of Education.

FRENCH

Lower Division Courses

In courses 1, 2, 3, and 4, sections meet four hours weekly.

1. Elementary French. Beginners' Course. (4) I, II. The Staff

2. Elementary French (continuation of 1) (4) I, II. The Staff

3. Intermediate French. (4) I, II. The Staff

4. Intermediate French (continuation of 3). (4) I, II. The Staff

8A. French Conversation. (1) I, II. Miss van Baelen

Two one-hour meetings. Prerequisite: French 2.

8B. French Conversation. (1) I, II. Mr. Delattre

For French majors only.

25A–25B. Advanced French. (3–3) Yr. The Staff

Prerequisite: French 4 or the equivalent.

Upper Division Courses

101A–101B. Conversation and Composition. (3–3) Yr. The Staff

Original composition; translation. Discussion of selected passages from French literature.

103A–103B. Phonetics. (2–2) Yr. Mr. Beachboard

Prerequisite: French 4.

Analysis of phonemes, diphthongs, intonation. Remedial exercises for vowel stress. Dictation with the International Phonetic Alphabet. Phonetic laboratory drills in intensity and timbre. Textbook discussion of theoretical and evolutive phonetics. Four hours preparation every week including laboratory exercises.

109A–109B. A Survey of French Literature from the Middle Ages through the Nineteenth Century. (3–3) Yr. Mr. Temmer

112A–112B. The Nineteenth Century. (3–3) Yr. Mr. Walker

118A–118B. The Sixteenth Century. (2–2) Yr.

120A–120B. The Seventeenth Century. (2–2) Yr. Miss van Baelen

121A–121B. The Eighteenth Century. (2–2) Yr. Mr. Temmer

125A–125B. French Institutions and Culture. (3–3) Yr. Mr. Beachboard

130A–130B. Advanced Grammar and Composition. (3–3) Yr. Mr. Delattre

132A–132B. Contemporary French Poetry. (2–2) Yr. Miss Greet

199. Independent Studies in French. (1–4) I, II. The Staff
Individual investigations in literary fields.

Graduate Courses

202. Seminar in Old French. (3) I. Mr. Delattre
Grammar of medieval dialects, intensive study of Old French as preserved in representative texts.

204A–204B. Studies in the Eighteenth Century. (2–2) Yr. The Staff
204A. Diderot.
204B. Rousseau.

206A–206B. Old French Texts. (2–2) Yr. Mr. Aggeler

211. Seminar on Medieval French Literature. (3) II. Mr. Delattre
Studies of representative French texts from the origins of French literature to the Renaissance.

214A–214B. Studies in the Nineteenth and Twentieth Century French Novel. (2–2) Yr. Mr. Walker

220A–220B. Explication de Textes. (2–2) Yr.

250A. Seminar on Balzac. (3) I. Mrs. Delattre
A critical examination of Balzac's writings, selected works, problems, and themes.

250B. Seminar on Stendhal. (3) II. Mrs. Delattre
A critical examination of Stendhal's writings, selected works, problems, and themes.

255B. Seminar on Modern French Theater. (3) II. Mr. Beachboard
An examination of the French theater from Symbolism to Existentialism.

298. Special Studies. (1–4) I, II. The Staff

GERMAN

Lower Division Courses

In courses 1, 2, 3, and 4, sections meet four hours weekly.

1. Elementary German. Beginners' Course. (4) I, II. The Staff

2. Elementary German (continuation of 1). (4) I, II. The Staff

3. Intermediate German. (4) I, II. The Staff

***3S. Readings in Scientific German.** (4) I, II. Mrs. Herritt
Prerequisite: German 1 and 2, or equivalent.

4. Intermediate German (continuation of 3). (4) I, II. The Staff
German 4 or equivalent is prerequisite for upper division courses in German.

8A. German Conversation. (1) I, II. The Staff
Prerequisite: German 2 or equivalent.
Course conducted entirely in German. Meets two hours per week.

Upper Division Courses

104A. Readings in the Drama of the Nineteenth Century. (3) II. Mr. Steinhauer

105. Lessing. (3) I, II. The Staff

106A–106B. German Grammar and Composition. (3–3) I, II. Mr. Gottschalk

108. Schiller's Life and Works. (3) I, II. Mr. Linn
Lectures and reading of selected texts.

109A. Introduction to Goethe: The Young Goethe. (3) I. Mr. Linn, Miss Mahlendorf
Intensive study of a selection of Goethe's lyrics to 1786 and of *Gotz, Werther, Urfaust,* and *Egmont.* Lectures on the literary background of the Storm and Stress Movement.

109B. Introduction to Goethe: The Classical Goethe. (3) II. Mr. Linn, Miss Mahlendorf
Intensive study of a selection of Goethe's lyrics from 1786 to 1832 and of *Iphigenie, Tasso, Hermann und Dorothea,* and *Novelle.* Lectures on the literary background of the Classical Movement.

110. The German Lyric from Goethe to Rilke. (3) I. Mr. Linn, Miss Mahlendorf

111. German Nineteenth Century Prose. (3) I, II. Mr. Linn, Miss Mahlendorf

* The two courses numbered 3 and 3S may be taken for credit. It is recommended that German 3 be taken before the specialized course 3S.

114A. German Literature from 1875 to First World War. (3) I.
Miss Mahlendorf, Mr. Steinhauer
Prerequisite: six units of upper division German, or consent of the instructor.
Readings and discussion of literary works from German Naturalism, Impressionism, and Neo-Romanticism.

114B. German Literature from First World War to Present. (3) II.
Miss Mahlendorf, Mr. Steinhauer
Prerequisite: six units of upper division German, or consent of the instructor.
Readings and discussion of literary works of German Expressionism and post-Expressionism.

118A–118B. Survey of German Literature. (3–3) Yr. Mr. Linn, Miss Mahlendorf

119. Middle High German. (3) I. The Staff
Prerequisite: upper division standing.
Outline of grammar; selections from Middle High German poetry.

132. Goethe's Faust. (3) II. Miss Mahlendorf
Prerequisite: two literature courses beyond German 4, or senior standing and the consent of the instructor.
Intensive study of the text of Goethe's *Faust*, Parts I and II, together with more general consideration of other treatments of the Faust theme in European literature.

199. Independent Studies in German. (1–4) I, II. The Staff
Individual investigations in literary fields.

ITALIAN

Lower Division Courses

1. Elementary Italian. (4) I. The Staff

2. Elementary Italian (continuation of 1). (4) II. The Staff

3. Intermediate Italian. (4) I.
Mr. Illiano, The Staff

4. Intermediate Italian (continuation of 3). (4) II. Mr. Illiano, The Staff

ORIENTAL LANGUAGE

Chinese

Lower Division Courses

1. Elementary Chinese. (4) I. The Staff

2. Elementary Chinese (continuation of 1). (4) II. The Staff

3. Intermediate Chinese. (4) I. The Staff

Upper Division Courses

110A–110B. Introduction to Chinese Literature. (2–2) Yr. The Staff
A survey of the literature of Chinese civilization. Readings, lectures, and discussion in English. 110A, classical literature; 110B, modern literature.

120A–120B. Readings in Modern Chinese. (3–3) Yr. Constantine Tung
Prerequisite: Chinese 3 or equivalent; 120A is not prerequisite to 120B.
120A. Readings on social and political topics.
120B. Readings in all genres of modern Chinese literature since 1917.

RUSSIAN

Lower Division Courses

1. Elementary Russian. (4) I, II. Mr. Masson
Elements of grammar and composition. Reading and conversation.

2. Elementary Russian (continuation of 1). (4) II. Mr. Masson

3. Intermediate Russian. (4) I. Mr. Masson

4. Intermediate Russian (continuation of 3). (4) II. Mr. Masson
Students may receive upper division credit for this course.

Upper Division Courses

115A–115B. Russian Realism of the Nineteenth Century. (2–2) Yr.
Mr. Masson
(See course description below.)

198. Readings in Russian. (1–2) I, II.
Mr. Masson

FOREIGN LITERATURES IN ENGLISH TRANSLATION

(Courses for which no knowledge of a foreign language is required.)

Upper Division Courses

French 109M–109N. A Survey of French Literature from the Middle Ages through the Nineteenth Century. (3–3) Yr.
Mr. Murray
Great masterpieces of French literature in translation. (May not be taken for major, minor or graduate credit.)

French 127A. Modern and Contemporary French Literature. (3) I, II.
Mr. Murray, Mr. Temmer
Readings in English translation of twentieth-century French poetry and prose: Valery, Apollinaire, Breton, Eluard, St. John Perse; Proust, Gide, Malraux, Mauriac, Camus.

French 127B. Modern and Contemporary French Literature. (3) I, II.
Mr. Murray, Mr. Temmer

Readings in English translation of twentieth-century French essays and drama: Valery, Maritain, Sartre; Claudel, Giraudoux, Anouilh, Beckett, Ionesco.

German 139A. Great Writers in German Literature. (3) I, II.
Mr. Linn, Miss Mahlendorf

Selected readings in English translation from the German classics, including certain works by Lessing, Schiller, Goethe.

German 139B. Great Writers in German Literature. (3) I, II.
Mr. Linn, Miss Mahlendorf

Selected readings in English translation from the romantic period to modern times, including certain works by Kleist, Büchner, Hölderlin, Hauptmann, Mann, Kafka, Rilke, Musil, Wedekind, and Brecht.

Russian 115A–115B. Russian Realism of the Nineteenth Century. (2–2) Yr.
Mr. Masson

Reading and discussion in English of representative novels and short stories of Pushkin, Lermontov, Gogol, Turgenev, Goncharov, Dostoievski, Tolstoi, Chekhov, and others.

Related Courses in Other Departments

Education SF 190. Procedures in Teaching French in Secondary Schools. (2) I, II.
Mrs. Delattre

Education SG 190. Procedures in Teaching German. (3) I. Mr. Gottschalk

Education SF 192A–B–C. Student Teaching: French. (2–2–2) I, II. Mrs. Delattre

Education SG 192. Student Teaching: German. (2) II. Mrs. Herritt

Philosophy 133. Philosophy of Language. (3) I or II. Mr. Hagen

Philosophy 146. Philosophy in Literature. (3) I or II. Mr. Fingarette, Mr. Sesonske

Education Abroad Courses

Bordeaux Center

See section on Education Abroad Program for detailed course descriptions.

BC 101A–101B. Conversation and Composition. (4–4)

BC 102A–102B. Advanced Conversation and Composition. (4–4)

BC 112A–112B. French Literature: The Nineteenth Century. (4–4)

BC 120–121. French Literature: The Seventeenth and Eighteenth Centuries. (4–4)

BC 132A–132B. Contemporary French Literature. (4–4)

Goettingen Center

See section on Education Abroad Program for detailed course descriptions.

GC 105. Lessing. (4)

GC 106A–106B. German Grammar and Composition. (4–4)

GC 112. Seminar on Nineteenth and Twentieth Century Drama. (5)

GC 125. Seminar on Selected Lyrical Tests. (5)

GC 126. Seminar on Selected Prose Texts. (5)

GC 128. Literature of the German Romantic Period. (4)

GC 130A–130B. Advanced German Grammar and Composition. (4–4)

GC 131A–131B. Exercises in German Style. (3–2)

GC 150A. Seminar on the Novels of Wieland. (5)

GC 150B. Seminar on Thomas Mann's "Buddenbrooks." (5)

Padua Center

See section on Education Abroad Program for detailed course descriptions.

PC 101A–101B. Grammar, Composition and Conversation. (4–4)

PC 130A–130B. Advanced Grammar, Composition and Conversation. (4–4)

PC 160A–160B. Italian Philology and Criticism. (5–5)

FOREIGN LITERATURE IN TRANSLATION

The following courses offered in the departments of language and literature do not require a reading knowledge of any foreign language. (See individual department for course description.)

Department of English

English 38A–38B. World Literature. (3–3)
English 46A–46B. Survey of English Literature. (3–3)
English 48. Modern Continental Literature. (3)
English 142. Dante in English Translation. (3)
English 179. Nineteenth-Century Verse. (3)

Department of Foreign Languages and Literatures

Chinese 110A–110B. Introduction to Chinese Literature. (2–2)
Chinese 140A–140B. Topics in Chinese Culture. (3–3)
French 109M–109N. A Survey of French Literature from the Middle Ages through the Nineteenth Century. (3–3)
French 127A–127B. Modern and Contemporary French Literature. (3–3)
German 139A–139B. Great Writers in German Literature. (3–3)
Russian 115A–115B. Russian Realism of the Nineteenth Century. (2–2)

Department of Spanish and Portuguese

Spanish 115A–115B. Masterpieces of Spanish Literature. (3–3)

GEOGRAPHY

Berl Golomb, M.A., *Lecturer in Geography.*
Robert W. McColl, B.A., *Lecturer in Geography.*

No major is as yet offered in Geography, pending organization of the Department. Service courses for major in the humanities and social sciences and for the Combined Social Sciences major with emphasis in Geography are listed below. The program is under the direction of the Dean of the College of Letters and Science.

GEOGRAPHY

Lower Division Courses

1. Elements of Geography. (3) I, II.
Mr. McColl

Introduction to core concepts and theories of contemporary Geography.

2. Introduction to Human Geography. (3) I, II. Mr. Golomb

An introduction to the geography of man, stressing concepts basic to understanding the variety of man-land relationships arising from the interaction of culture and the physical environment.

3. Elements of Physical Geography. (3) I, II.
Mr. Golomb

A systematic examination of the terrestrial environment, including salient features of the astronomic relations, atmospheric circulation, the dynamics of weather, and the characteristics of climate, soils and biotic distributions.

***5A–5B. Economic Geography.** (3–3) Yr.
The Staff

The physical and cultural elements of the landscape and environment in relation to basic economic activities.

Upper Division Courses

120. Political Geography. (3) I, II.
Mr. McColl

Prerequisite: Geography 1 or 2, or consent of instructor.

Study of the interaction of geographic and political elements in world political patterns, illustrated by historical and contemporary examples.

199. Independent Studies in Geography. (1–4) I, II. The Staff

Education Abroad Courses

Bordeaux Center

See section on Education Abroad Program for detailed course descriptions.

BC 141A–141B. Economic and Political Geography. (4–4)

* Not to be offered, 1964–65.

GEOLOGY

Aaron C. Waters, Ph.D., *Professor of Geology (Chairman of the Department).*
Robert W. Webb, Ph.D., *Professor of Geology.*
Clifford A. Hopson, Ph.D., *Associate Professor of Geology.*
Robert M. Norris, Ph.D., *Associate Professor of Geology.*
Donald W. Weaver, Ph.D., *Assistant Professor of Geology.*
William S. Wise, Ph.D., *Assistant Professor of Geology.*
C. Douglas Woodhouse, LL.M., *Assistant Professor of Mineralogy, Emeritus.*

Joseph C. Clark, M.A., *Acting Assistant Professor of Geology.*
Richard V. Fisher, Ph.D., *Lecturer in Geology.*
Charles W. Rock, B.A., *Lecturer in Geology.*
Ian L. Gibson, Ph.D., *Associate in Geology.*

The Geology Department's program to the bachelor's degree provides the background in mathematics, basic sciences, and elementary geology necessary to undertake graduate studies in geology. Although numerous semi-professional openings are available on graduation, under present conditions a four-year college program is inadequate for the profession of geologist. Most students therefore take additional training leading to the master's or doctor's degrees.

Counseling. Each student is assigned a faculty adviser who serves as his consultant and must approve his program of studies.

Preparation for the Major

Required (36 units in the lower division): Geology 2, 2L, 3, 3L, 6A–6B, Chemistry 1A–1B, Mathematics 3A–3B, 4A, Physics 7, 8, 8L. Recommended: Mathematics 4B, Physics 4C (or 9, 9L) for 7 units.

The Major

Twenty-four units required in upper division courses: 14 units from Geology 102, 103A–103B, 111 plus ten or more units from the following: Geology 104A–104B, 105, 110, 118, 119, 120, 121, 125, 135. All students should plan to include course 118 from this list.

On approval of their program by the staff, students planning to enter graduate school may substitute up to 12 hours of approved courses in biology, chemistry, mathematics, or physics for required courses in geology. (For example, Zoology 112, Chemistry 140, Mathematics 119A.)

The Minor

Required: Twenty units, including Geology 2, 2L (or 101), 3, 3L, 6A–6B, plus additional units from mineralogy, geology, and paleontology, but normally not to include Geology 199.

Related Curriculum: Physical Science. Geology may be offered as one area of concentration for partially fulfilling the requirements of the interdepartmental major in physical science. See page 167 for details. Consult the adviser for the physical science major for details.

THE MASTER OF ARTS DEGREE

Admission

General University regulations are listed on page 57. In addition to the scholarship requirement for graduate study, the candidate must show aptitude for research. Entering student's preparation will be evaluated from academic records, and where necessary by supplementary examinations.

Requirements

1. Completion of at least 24 units of approved course work, of which at least 12 units must be in graduate courses (200 series). The remaining courses may be selected from upper

division or graduate courses in chemistry, biology, mathematics, or physics, as well as geology. All course work must integrate into a definite plan prepared in consultation with the adviser, and approved by the department.

2. Demonstration by examination of a reading knowledge of scientific German, Russian, or French.

3. Preparation of a thesis, and satisfactory completion of comprehensive and oral examinations.

Teaching Credentials

The geology major may serve as an appropriate part of the program of studies required for a physical science and general science major for an elementary, secondary, or junior college teaching credential in California. For this purpose the student is advised to substitute some courses of more descriptive and regional content (e.g., Geology 107, Geology of North America; Geology 109, Geology of California; and Geology 117, Geomorphology) for certain of the pre-professional courses listed elsewhere as constituting the major.

Only single-subject minors are applicable toward teaching credentials under the California Education Code. Geology may serve as such a minor.

A student wishing to secure any teaching credential should confer with designated counselors in the Department of Geology and in the School of Education.

GEOLOGY

Lower Division Courses

2. General Geology: Physical. (3) I, II.
Mr. Webb, ———

Lecture, three hours.

An elementary course covering the principles and concepts of physical geology.

2L. Laboratory, General Geology: Physical. (1) I, II. Mr. Rock

Laboratory, three hours. Prerequisite: should be taken concurrently but may follow Geology 2.

Identification of common minerals and rocks. Introduction to topographic and geologic maps, land forms, and geologic structures. Field trips.

3. General Geology: Historical. (3) II.
The Staff

Lecture, three hours. Prerequisite: Geology 2.

The geologic history of the earth interpreted from its rocks and fossils.

3L. Laboratory, General Geology: Historical. (1) II. The Staff

Laboratory, three hours. Prerequisite: should be taken concurrently but may follow Geology 3.

Elementary problems in paleontology and stratigraphy.

6A–6B. Introduction to Mineralogy. (2–2) Yr.
Mr. Webb, Mr. Wise

Lecture, one hour; laboratory, three hours. Prerequisite: high school or college chemistry.

Determinative mineralogy and crystal morphology.

Upper Division Courses

101. Principles of Geology. (4) I, II.
Mr. Waters

Lecture, three hours; laboratory, three hours. Not open to students who have taken Geology 2.

Principles, concepts, and methods of geology. Laboratory exercises and field trips.

102. Field Methods. (4) I.
Mr. Weaver

Laboratory, four hours; field, all day Saturday. Prerequisite: Geology 103A.

Geologic mapping on topographic maps and aerial photographs; use of geologic field instruments; field techniques; preparation of geologic maps and reports.

103A. Introduction to Petrology. (3) I.
Mr. Fisher

Lecture, one hour; laboratory, two three-hour periods. Prerequisite: Geology 6B; Chemistry 1A.

Origins and characteristics of igneous and sedimentary rocks. Hand lens identification.

103B. Introduction to Petrology. (3) II.
Mr. Norris, Mr. Wise

Lecture, one hour; laboratory, two three-hour periods. Prerequisite: Geology 103A.

Origins and characteristics of sedimentary and metamorphic rocks. Hand lens identification.

104A. Structural Geology of Sedimentary Rocks. (4) II. Mr. Fisher

Lecture, one hour; field work and laboratory all day Saturday; occasional weekend trips. Prerequisite: Geology 102, 103B.

Geologic mapping of sedimentary terranes with emphasis on the structural analysis of sedimentary rocks. Studies in stratigraphy and classification of stratigraphic units.

104B. Structural Geology of Igneous and Metamorphic Rocks. (4) II. Mr. Hopson

Lecture, one hour; field work and laboratory all day Saturday; occasional weekend trips. Prerequisite: Geology 104A.

Structural investigation and petrologic interpretation of igneous and metamorphic terranes in the field.

105. Marine Geology. (3) I. Mr. Norris

Prerequisite: Geology 3 or 101, or consent of instructor.

Geologic processes in the sea; rocks and sediments of the sea bottom and the shoreline.

106. Volcanic Sedimentation. (3) I. Mr. Fisher
Field and laboratory work. Prerequisite: Geology 103B.
Origin of volcaniclastic rocks.

***107. Geology of North America.** (3) II. Mr. Norris, Mr. Webb
Lecture, three hours. Prerequisite: Geology 3 or 101.

109. Geology of California. (3) II. Mr. Webb
Lecture, three hours. Prerequisite: Geology 3 or 101, and consent of the instructor.

110. Optical Mineralogy. (3) I. Mr. Wise
Lecture, one hour; laboratory, six hours. Prerequisite: Geology 6B, 103B.

111. Invertebrate Paleontology. (4) II. Mr. Weaver
Lecture, two hours; laboratory, two three-hour periods. Prerequisite: Geology 102, or upper division standing in biology.
The study of invertebrate fossils; a survey of the principles of taxonomy, evolution, chorology, and stratigraphic paleontology.

***117.Geomorphology.** (3) I. Mr. Norris, Mr. Webb
Lecture, three hours. Prerequisite: Geology 3 or 101, or consent of the instructor.

118. Summer Field Geology. (6) Mr. Weaver
Six weeks, commencing with Summer Session. Prerequisite: Geology 104A.
Preparation of a geologic map, geologic sections, and a report on a selected region.

119. Field Investigations in Geology. (6) The Staff
Six weeks during the summer. Prerequisite: Geology 104B and consent of the instructor. May be taken in lieu of Geology 118, with approval of the department.
Selected field areas are investigated as research problems. Content varies from year to year.

***120. Sedimentary Petrography.** (4) I. Mr. Clark
Prerequisite: Geology 104A, 110.
The origin and classification of sedimentary rocks; study of the processes of sedimentation.

121. Petrography of the Igneous and Metamorphic Rocks. (4) II. Mr. Waters, Mr. Wise
Lecture, two hours; laboratory, six hours. Prerequisite: Geology 110.
Determination and classification of rocks with the petrographic microscope.

125. Geochemistry. (4) I. Mr. Hopson
Lecture, three hours; laboratory, three hours. Prerequisite: Mathematics 3B, Chemistry 1B.

135. Geophysics. (4) II. ———
Lecture, three hours; laboratory, three hours. Prerequisite: Mathematics 3B, Physics 8, 8L.

199. Special Study for Advanced Undergraduates. (1–4) I, II. The Staff
Prerequisite: senior standing with a 3.0 grade-point average within the major.
Selected readings or research under the direction of a faculty member.

* Not to be given, 1964–65.

Graduate Courses

***210. Paleoecology.** (3) I. ———
Lecture, two hours; laboratory, three hours; occasional field trips. Prerequisite: Geology 111.

212. Seminar in Stratigraphic Paleontology. (2) I. Mr. Weaver
Discussion, two hours. Prerequisite: Geology 111.
A review and discussion of selected current and classic works in the field of stratigraphic paleontology.

214. Mesozoic and Cenozoic History of the West Coast of North America. (4) I. Mr. Weaver, ———
Lecture, two hours; laboratory, six hours; one three-day field trip. Prerequisite: Geology 111.
Emphasis on the stratigraphic relationships between the foraminiferal, molluscan and vertebrate faunas.

218. Micropaleontology. (4) II. ———
Lecture, two hours; laboratory, six hours. Prerequisite: Geology 111.

222. Problems in Stratigraphy and Sedimentation. (2–6) II. ———
Prerequisite: Geology 118, 119, or equivalent and consent of the instructor.
Selected field studies with emphasis on stratified rocks.

225A–225B. Petrogenesis. (3–3) I, II. Mr. Waters
Lecture, two hours; laboratory, three hours. Prerequisite: Geology 121.
The interpretation and origin of igneous and metamorphic complexes, including the application of physical chemistry to problems in petrogenesis.

227A–227B. Advanced Mineralogy. (3–3) I, II. Mr. Wise
Lecture, one hour; laboratory, two three-hour periods. Prerequisite: Geology 110.
X-ray methods, crystal chemistry and structure; methods of mineral separation and identification; ore mineral microscopy; universal stage techniques.

230. Advanced Structural Geology (4) II. ———
Lecture, three hours; laboratory, three hours. Prerequisite: Geology 118, 120.
Classical and geophysical methods of structural analysis. Modern concepts of earth structure.

235. Petrologic Problems. (3) I. Mr. Hopson
Lecture, two hours; laboratory, three hours. Prerequisite: Geology 121.
Chiefly problems in metamorphism and geochronology. Content varies from year to year.

247. Seminar in Quaternary Geology. (3) I. Mr. Norris
Lecture, three hours. Prerequisite: Geology 117, or consent of the instructor.

260. Seminar in Geology. (1) I, II. The Staff
One hour each week.
Presentation and discussion of current research, and reviews of the literature on selected geologic concepts. Required of all graduate students; open to seniors with a 3.0 grade-point average.

299. Research in Geology. (2–6) I, II. The Staff
Research: experimental, theoretical, or field. May be undertaken by properly qualified graduate students under the direction of a staff member.

HISPANIC CIVILIZATION

Committee in Charge
Donald M. Dozer, Ph.D., *Professor of History.*
Charles J. Erasmus, Ph.D., *Professor of Anthropology (Chairman of the Committee).*
Russell R. Fitzgibbon, Ph.D., *Professor of Political Science.*
Stephen S. Goodspeed, Ph.D., *Professor of Political Science.*
Winston A. Reynolds, Ph.D., *Associate Professor of Spanish.*

INTERDEPARTMENTAL MAJOR

The interdepartmental major in Hispanic Civilization is designed to serve the needs of the following students: (1) those planning careers which will necessitate residence in, or knowledge of, the countries of Spanish and Portuguese speech and culture—for example, government service, teaching, business, journalism; (2) students preparing for graduate study in the social sciences or languages and literature, with special emphasis in the Spanish, Portuguese, and Latin-American fields; (3) students preparing to teach Spanish in the elementary or, in some cases, secondary schools; (4) students desiring a general education with some emphasis in this particular area of Western culture. The geographical areas included in the scope of this major are Spanish-America, Brazil, Spain, and Portugal.

The following required courses, and those recommended, form a general guide. Selection of specific courses will be made by the student in consultation with the committee in charge, and this selection will be based primarily upon the needs and objectives of the individual student. Credit may be given for studies undertaken in Spanish, Portuguese, or Latin-American schools.

Preparation for the Major

Required courses: Spanish 4 (if passed with a grade lower than B, the student must complete course 25A; if 25A is passed with a grade lower than B, then course 25B is also required) or equivalent (Portuguese 1 & 2 is recommended), History 8A–8B, 37, 38. Recommended courses: Anthropology 2, 5, Economics 1A–1B, History 4A–4B, Sociology 1.

The Major

A minimum of 24 units is required as follows: Art 115A *or* 115B, History 160A *or* 160B. Spanish 107A–107B *or* 109A–109B. The remaining 12 units should be selected from: Anthropology 107, Art 115A *or* 115B (see above), History 160A *or* 160B, 161A–161B, 166, 168, 199, Music 116, Political Science 148, 149, 199, Spanish 103, 105A–105B, 107A–107B *or* 109A–109B (see above), 110A–110B, 111A–111B, 118A–B–C–D–E, 199.

The Minor

Hispanic Civilization may be elected as a minor. In this case the student will take 12 instead of 24 units in the upper divison, i.e., those listed under "Required Courses."

Teaching Credentials

A major in Hispanic Civilization may serve as an appropriate part of the program of studies required for a Standard Teaching Credential with a Specialization in Elementary School Teaching in California.

Those already enrolled in the program of studies leading to a general secondary teaching credential with a major in Hispanic Civilization may complete the requirements and receive the credential according to the regulations as set forth in the 1963–1964 UCSB *Catalogue*. All other students should consult assigned advisers in Hispanic Civilization and in the School of Education.

HISTORY

*Henry M. Adams, Ph.D., *Professor of History.*
A. Russell Buchanan, Ph.D., *Professor of History.*
Alexander DeConde, Ph.D., *Professor of History (Chairman of the Department).*
Donald M. Dozer, Ph.D., *Professor of History.*
C. Warren Hollister, Ph.D., *Professor of History.*
Wilbur R. Jacobs, Ph.D., *Professor of History.*
Lawrence Kinnaird, Ph.D., *Professor of History.*
**Philip W. Powell, Ph.D., *Professor of History.*
William H. Ellison, Ph.D., *Professor of History, Emeritus.*
George M. Haddad, Ph.D., *Associate Professor of History.*
Immanuel C. Y. Hsu, Ph.D., *Associate Professor of History.*
Robert L. Kelley, Ph.D., *Associate Professor of History.*
Hildor A. Barton, Ph.D., *Assistant Professor of History.*
R. Davis Bitton, Ph.D., *Assistant Professor of History.*
F. A. Bonadio, Ph.D., *Assistant Professor of History.*
‡Edward Chmielewski, Ph.D., *Assistant Professor of History.*
John F. H. New, Ph.D., *Assistant Professor of History.*
Otey M. Scruggs, Ph.D., *Assistant Professor of History.*

Leland D. Baldwin, Ph.D., *Lecturer in History.*
Donald C. Davidson, Ph.D., *Lecturer in History.*
Conrad D. Totman, M.A., *Lecturer in History.*

Preparation for the Major

Twelve units required in lower division: History 4A–4B, and either History 17A–17B, or History 8A–8B.

The Major

Required: twenty-four units of upper division work in history, consisting of History 195. 6 units of European history, 6 units of United States or Hispanic-American history, and the remaining units selected in consultation with the student's adviser.

The Minor

Required: Twenty-one units including History 4A–4B, 8A–8B or 17A–17B, and nine upper division units.

THE MASTER OF ARTS DEGREE

Students who wish to pursue work toward the Master of Arts degree in history at the University of California, Santa Barbara, must meet the general requirements for admission to graduate standing. In addition they will ordinarily be expected to have completed an undergraduate major in history or the equivalent. At the outset of their graduate work they are advised to confer with instructors offering courses in the fields in which they propose to present themselves for examination.

The Master of Arts degree will be awarded to students who satisfy the requirements prescribed by the Graduate Council and who, in addition, meet the following specific requirements of the Department of History.

1. *Foreign Language.* A reading knowledge of one foreign language approved by the Department of History. In certain fields a second language may be required. This requirement should be met in the first semester of graduate work. Language examinations will be given

* Absent on leave, fall 1964.
** Absent on leave, 1964–66.
‡ Absent on leave, spring 1965.

on the first Tuesday in October and February. Details as to the language examination may be obtained from the chairman of the department.

2. *Units of Work.* Twenty-four units of upper division or graduate courses of which twelve units must be graduate courses including at least six units in research seminars. Students who choose or are advised to write a thesis for the Master of Arts degree may register thesis research up to six units of credit.

3. *Comprehensive Examinations.* Written two-hour examinations in three fields chosen from two groups in the following list. Two fields must be chosen from one group and one from the other. These comprehensive examinations will be given the first week in December and the first week in May. Students who choose to write a thesis for the Master of Arts degree are required to write comprehensive examinations in only two fields, one of which must be in a field different from the thesis field.

Group I

Field 1. Ancient History.
Field 2. Medieval History, 375–1450.
Field 3. Early Modern Europe, 1450–1789.
Field 4. Late Modern Europe, since 1789.
Field 5. Britain and the British Empire.
Field 6. Russia.
Field 7. Ancient and Medieval Far East.
Field 8. Modern Far East.
Field 9. Medieval and Modern Middle East.

Group II

Field 1. United States before 1865.
Field 2. United States after 1865.
Field 3. Latin America before 1825.
Field 4. Nineteenth and Twentieth Century Latin America.

THE DOCTORAL PROGRAM

The History Department of the University of California, Santa Barbara offers a program leading to the Ph.D. in American history, Latin American history, and, under certain circumstances, in European and Asian history. Students who wish to enroll in the doctoral program should apply to the chairman of the Department of History through the Office of the Dean of the Graduate Division, University of California, Santa Barbara.

1. *Admission.* The doctoral program is normally open only to mature students who have already completed the Master's degree in history or its equivalent, although in exceptional cases it may be open to a student with only a Bachelor's degree. The applicant is generally expected to have a B average in his previous academic record, but his admission to the doctoral program is not judged solely on this basis. The following factors also weigh heavily in the selection: skill in the use of the English language, academic honors, confidential letters of recommendation, practical experience where relevant, and information obtained from interviews.

After admission, the student will be assigned an advisory committee of the department to guide him in selecting his program of study.

2. *Residence.* Two years of full-time study beyond the Bachelor of Arts degree or its equivalent is required.

3. *Languages.* The doctoral candidate must demonstrate a reading knowledge of two foreign languages pertinent to his subject and occasionally such additional languages as may be necessary in his particular field of study. A reading knowledge of one foreign language is prerequisite to enrollment in graduate history courses. A new student should take the first foreign language examination during the first week of the first semester of his graduate study. It is strongly recommended that a student take the second foreign language examination as soon as possible. In any event, he must pass it before the end of his second year of graduate study. In no case will he be allowed to take the general examinations for the Ph.D. without first completing the language requirement.

4. *Fields of Study.*

Group I.

1. Ancient History.
   a. Greek History.
   b. Roman History.
   c. Ancient Middle East.
2. Medieval History, 375–1450.
   a. Early Medieval.
   b. Late Medieval.
   c. Medieval Islamic Middle East.

Group II.

3. Modern Europe.
   a. The Renaissance and the Reformation.
   b. Seventeenth and Eighteenth Centuries.
   c. Nineteenth and Twentieth Centuries.
4. British History.
   a. Britain, to 1603.
   b. Britain, since 1603.
   c. The British Empire and Commonwealth.
   d. Intellectual History.
5. History of Russia.
6. History of Spain.

Group III.

7. Far Eastern History.
   a. Traditional China, prior to 1800.
   b. Modern China, 1800 to date.
   c. Japan.
8. The Modern Middle East since 1800.

Group IV.

9. History of the United States.
   a. Colonial and Revolutionary Period.
   b. Nineteenth Century.
   c. Twentieth Century.
   d. Westward Expansion, Pacific Coast and California History.
   e. Intellectual History.
   f. History of Foreign Relations.

Group V.

10. Latin American History.
    a. Colonial Period.
    b. National Period.
    c. Inter-American Relations.

The doctoral candidate must select four fields of study spreading over at least three groups indicated above. He may substitute an outside field in a related discipline for one of the four fields. He is required to take at least four semester-seminars or their equivalents and is strongly encouraged to take a course in historiography if he has not taken and passed such a course before his admission to the doctoral program.

5. *General Examinations.* When the candidate has completed or is about to complete these requirements, at the end of the second year or at the beginning of the third year, he must pass written and oral general examinations, at which time he will be examined in all four fields, one of which must be his field of specialization. He is expected to demonstrate erudition and mastery in his field of specialization and professional competence in the other three fields. Only after he has successfully passed this general examination can he proceed to work on his dissertation, which must be a piece of original research. In this phase he is encouraged to travel to other centers of learning inside or outside this country in order to broaden his mental horizon and to collect materials for his dissertation.

6. *Special Examination.* Upon presentation of the dissertation, the candidate will be required to defend it orally in a special examination, at which time he will again be examined in his field of specialization as well as on his dissertation. This special examination may be waived at the discretion of the department.

7. *Dissertation.* The dissertation must be written in clear prose and contribute to the stock of historical knowledge by adding new material or by bringing new interpretations to bear upon old facts. The dissertation should normally be completed within five years after the general examination; in special cases the student may petition to have this limit extended.

Teaching Credentials

Either a major or a minor in History may serve as an appropriate part of the program of studies required for an elementary, secondary, or junior college teaching credential in California. A student wishing to secure any of these credentials should confer with designated counselors in the Department of History and in the School of Education.

HISTORY

Lower Division Courses

4A–4B. History of Europe. (3–3) Yr. The Staff

European civilization from ancient times to the present.

Not open to juniors or seniors except by permission of the instructor. 4A, Ancient and Medieval Civilizations, is prerequisite to 4B, Modern Civilization.

8A–8B. History of the Americas. (3–3) Yr. Mr. Dozer, Mr. Powell

The Western Hemisphere from discovery to the present.

8A. Exploration, settlement, institutions, frontier expansion, imperial rivalries.

8B. Independence achievement, evolution of nationalities, inter-American relationships, relations with Europe and Asia.

17A–17B. Political and Social History of the United States. (3–3) Yr. The Staff
The evolution of American institutions and civilization.
For ways of satisfying the requirement in American History and Institutions, see page 42.

19. History of the Far East. (3) I, II. Mr. Hsu
A survey of the history and civilizations of Eastern Asia.

Upper Division Courses

103A–103B. History of Europe in the Seventeenth and Eighteenth Centuries. (3–3) I, II. Mr. Barton
Prerequisite: History 4A–4B, or equivalent.
First semester, 1600–1763: political, social, economic, diplomatic, intellectual, etc. history in comparative and national contexts. Second semester, 1763–1815: Enlightenment, Enlightened Despotism, French Revolution and Napoleon. Lecture and reading course with individual student reports.

104. The Middle East: History and Civilization. (3) I, II. Mr. Haddad
A survey history of the Middle East from ancient times to the present emphasizing the main landmarks of the history of the area and the legacy of its various cultures.

110. Ancient Near East. (3) I. Mr. Haddad
Prerequisite: History 4A or equivalent.
The genesis of Western civilization: our cultural debt to the ancient Babylonians, Egyptians, Hittites, Phoenicians, Aramaeans, Hebrews, Assyrians, and Persians.

111A–111B. Greco-Roman History. (3–3) I, II. ———
111A. The Greek world to about 220 B.C.
111B. Rome and the ancient world to A.D. 313.

***112. Greek City States.** (3) I, II. ———
Prerequisite: History 111A or consent of the instructor.

113A–113B. History of Europe in the Nineteenth and Twentieth Centuries. (3–3) Yr. Mr. Adams
Prerequisite: History 4A–4B, or equivalent. History 113A is prerequisite to 113B.
European civilization in the nineteenth and twentieth centuries; interrelationship of the centuries and of Europe to the world.

114. The Fall of the Roman Empire. (3) I, II. ———
Prerequisite: History 111B or equivalent; or consent of the instructor.

115A–115B. The Middle East in the Middle Ages. (3–3) I, II. Mr. Haddad
Prerequisite: History 4A–4B, or equivalent.
The Christian and Muslim world 395 to 1453, including a study of the Byzantine Empire, its grandeur, decline and fall and its contributions to civilization along with a study of the history and civilization of the neighboring Islamic countries.

* Not to be given, fall 1964.

121. Medieval Europe, 300–1050. (3) I. Mr. Hollister
Prerequisite: History 4A–4B, or equivalent.
The political, economic, and cultural evolution of Europe from the time of Constantine to the mid-eleventh century.

122. Medieval Europe, 1050–1350. (3) II. Mr. Hollister
Prerequisite: History 4A–4B, or equivalent.
European civilization during the High Middle Ages. The struggle between Church and State, the rise of feudal monarchies, the revival of commerce, and the flowering of medieval culture.

131A–131B. The British Empire and Commonwealth. (3–3) I, II. ———
Prerequisite: History 4A–4B.
The rise of the British Empire. Expansion, colonialism, and the growth of the British Commonwealth of Nations.

139A–139B. History of the Middle East in the Nineteenth and Twentieth Centuries. (3–3) I, II. Mr. Haddad
The Ottoman Empire and the Eastern Question. Reform movements, cultural and national awakening, and the impact of the west in Iran, Turkey and the Arab countries. Evolution of the Middle Eastern states until the present time.

141A–141B. The Renaissance and Reformation. (3–3) I, II. Mr. Bitton
Prerequisite: History 4A–4B, or equivalent.
The political, economic, and cultural evolution of Europe, 1300–1648.

142. Modern France. (3) II. ———
A study of nineteenth and twentieth century France, stressing internal political, social, and economic trends, and France's role in world affairs.

150A–150B. History of Russia. (3–3) I, II. Mr. Chmielewski
Prerequisite: History 4A–4B or equivalent, or consent of the instructor. History 150A is prerequisite to 150B.
Russian civilization from its origins to the present.

153A–153B. History of England. (3–3) I, II. Mr. New
The history of England from earliest times to the present.

154A–154B. Tudor and Stuart England. (3–3) I, II. Mr. New
Religious, intellectual, social and political developments contributing to the consolidation of monarchy, and the shift in the balance of sovereignty from Crown to Commons, occasioned by the Civil Wars and Revolution.

****155. History of Canada.** (3) I, II. Mr. Davidson
From Cartier to the present with emphasis upon British and Western Hemisphere influences.

** Not to be given, 1964–65.

160A–160B. Spain and the Spanish Empire. (3–3) I, II. Mr. Powell

160A. Emphasis on Spanish institutional development, European-Mediterranean relationships, and "Golden Age," approximately 1250–1700.

160B. Emphasis on Spain overseas (especially in the Americas), approximately 1500–1830.

161A–161B. Hispanic American History. (3–3) Yr. Mr. Dozer

161A. The winning of independence, struggle toward nationality, cultural developments and international relations of the Hispanic American countries during the nineteenth century.

161B. History of the Hispanic American area during the twentieth century.

164. Southern South America. (3) I, II. Mr. Dozer

History of Argentina, Chile and their neighbors in their international setting.

***166. History of Mexico.** (3) I. Mr. Powell

From pre-Columbian times to the present. Integration of European and native cultures to form the Mexican nation.

168. History of Inter-American Relations. (3) I, II. Mr. Dozer

Prerequisite: upper division standing.

History of the relations of the Hispanic American nations among themselves and with the United States since independence and of projects for inter-American regional cooperation including the Pan American movement.

171. Colonial and Revolutionary America. (3) I or II. Mr. Jacobs

Prerequisite: History 17A–17B, an equivalent course, or consent of the instructor.

Political and social history of the Thirteen Colonies, their neighbors, westward expansion, beginnings of culture, and the American Revolution.

172A–172B. The United States: the New Nation. (3–3) I, II. ———

Prerequisite: History 17A, an equivalent course, or consent of the instructor.

Political, social, and economic history of the United States from 1787 to 1836, with emphasis on the rise of political parties, westward expansion, the beginnings of sectional rivalries, and the emergence of the national character.

173A. The United States: the Era of Sectional Conflict, 1628–1860. (3) I. Mr. Bonadio

Prerequisite: History 17A–17B, an equivalent course, or consent of the instructor.

173B. Civil War and Reconstruction: 1860–1876. (3) II. Mr. Bonadio

Prerequisite: History 17A–17B, an equivalent course, or consent of the instructor.

174. The United States: 1876–1900. (3) I, II. Mr. Scruggs

Prerequisite: History 17A–17B, or consent of the instructor.

* Not to be given, 1964–65.

175A–175B. History of the Foreign Relations of the United States. (3–3) I, II. Mr. DeConde

Prerequisite: History 17A–17B, an equivalent course, or consent of the instructor.

175A. The theory and practice of American foreign policy from colonial times to 1900.

175B. Analysis of twentieth-century developments. Emphasis on broad policy, concepts and ideas.

176A–176B. Recent History of the United States. (3–3) I, II. Mr. Buchanan

Prerequisite: History 17A–17B, an equivalent course, or consent of the instructor.

Political, economic, and social development of the United States from 1900 to the present time.

177A–177B. Anglo-American Intellectual History. (3–3) I, II. Mr. Kelley

Prerequisite: History 17A–17B, 4A–4B, or consent of instructor.

The intellectual history of the Anglo-American community, with emphasis upon interaction between its members. From common origins to the present. The dividing point in the course is 1815.

178. The Social History of the United States in the Nineteenth and Twentieth Centuries. (3) II. Mr. Scruggs

Prerequisite: History 17A–17B, or consent of instructor.

A study of the character and values of the American people, of selected classes and institutions, with emphasis on businessmen, labor, the family, and racial and ethnic groups.

181. The American West. (3) I or II. Mr. Jacobs

Prerequisite: History 17A–17B, an equivalent course, or consent of the instructor.

The West as a frontier and as a region, in transit from the Atlantic seaboard to the Pacific, and from the seventeenth century to the present.

182. History of California. (3) I. Mr. Buchanan, Mr. Kelley

California as a case study of national trends, and as an unique setting with its special problems and culture.

184. History of China. (3) I, II. Mr. Hsu

Chinese civilization from ancient times to the beginning of the modern age.

185. History of Japan. (3) I, II. Mr. Hsu

Japanese civilization from ancient times to the beginning of the modern age.

186A–186B. Modern Far East. (3–3) I, II. Mr. Hsu

186A. The Far East in the Nineteenth Century.

186B. The Far East in the Twentieth Century.

195. The Study and Methods of History. (3) I, II. The Staff

Prerequisite: upper division major in history or consent of instructor.

One of the following required of history majors: A. U.S. Colonial and the Westward Movement; B. American Intellectual; C. United States in the Nine-

teenth Century; D. Modern Latin America; E. Modern England; F. Modern Russia; G. Modern Middle East; H. Ancient History; I. Medieval History; J. Modern Far East; K. The United States, 1787–1836; L. Renaissance and Reformation; M. Early Modern Europe; N. Modern Europe.

199. Independent Studies in History. (1–4) I, II. The Staff
Admission by special arrangement.

Graduate Courses

201. Advanced Historical Literature. (3) I, II. The Staff
Advanced studies in the sources and general literature of the several fields of history.
A. Europe: Mr. Adams, Mr. Hollister.
B. United States: Mr. Buchanan, Mr. DeConde, Mr. Jacobs.
C. Latin America: Mr. Dozer, Mr. Powell.
D. Far East: Mr. Hsu.
E. Near East: Mr. Haddad.
F. Russia: Mr. Chmielewski.

202. European Historiography. (3) I or II. Mr. Adams

203. American Historiography. (3) I or II. Mr. Jacobs

211. The Hellenistic-Roman Near East. (3) II. Mr. Haddad
Prerequisite: History 110, 111, or 112.
Study of the Hellenistic monarchies, their decline and the spread of Roman rule in the Near East; the Hellenization of the East and the various aspects of Greco-Roman culture in the area, and of Eastern culture in Greece and Rome.

221. Seminar in Medieval History. (3) I, II. Mr. Hollister
Prerequisite: History 122: Medieval Europe, 1050–1350.

241. Seminar in Renaissance-Reformation. (3) II. Mr. Bitton

258. Seminar in Modern European History. (3) I. ———

260. Spain and Spanish Empire. (3) I. Mr. Powell

266. Seminar in Mexican History. (3) II. Mr. Powell

267. Diplomatic History of the United States. (3) I, II. Mr. DeConde

271. Seminar in the History of the American West. (3) I or II. Mr. Jacobs

273. Seminar in the Civil War and Reconstruction. (3) II. Mr. Buchanan

274. Recent History of the United States. (3) I, II. Mr. Buchanan

277. Anglo-American Intellectual History. (3) II. Mr. Kelley
Prerequisite: History 177A–177B, or consent of instructor.
Research seminar, stressing comparative studies, in Anglo-American intellectual history since about 1850.

283. Seminar in the History of Inter-American Relations. (3) I or II. Mr. Dozer
Prerequisite: reading knowledge of a foreign language, preferably Spanish, Portuguese, or French.

290. Seminar in U. S. Relations with the Far East. (3) II. Mr. Hsu
Prerequisite: History 186A or 186B.
A research seminar in the discipline of diplomatic history, with particular emphasis on the role of the United States in the development of the modern Far East.

299. Directed Research. (2–4) I, II. The Staff
Prerequisite: graduate standing and consent of the instructor.

Related Courses in Another Department

Education SS 190. Teaching Procedures in Social Studies. (2) I, II. Mr. Nelson

Education SS 192A–192B. Student Teaching: Social Studies. (2–2–2) I, II. Mr. Davidson, Mr. Nelson

Education Abroad Courses

Bordeaux Center

See section on Education Abroad Program for detailed course descriptions.

BC 102A–102B. History of Europe in the Seventeenth and Eighteenth Centuries. (4–4)

BC 113A–113B. History of Europe in the Nineteenth and Twentieth Centuries. (4–4)

BC 121–122. Medieval Europe. (4–4)

Goettingen Center

See section on Education Abroad Program for detailed course descriptions.

GC 113A–113B. History of Europe in the Nineteenth and Twentieth Centuries. (6–4½)

GC 113C–113D. Seminar in Modern European History. (5–3½)

GC 121–122. Medieval Europe. (5–3½)

GC 145A–145B. History of Early Mercantilism. (5–4)

Padua Center

See section on Education Abroad Program for detailed course descriptions.

PC 109A–109B. Ancient History. (4–4)

PC 113A–113B. History of Europe in the Nineteenth and Twentieth Centuries. (4–4)

PC 125A–125B. History of Europe from the Renaissance to the Nineteenth Century. (4–4)

HOME ECONOMICS

Charlotte E. Biester, Ed.D., *Professor of Home Economics.*
Evelyn M. Jones, Ph.D., *Professor of Home Economics (Chairman of the Department).*
Alice V. Bradley, M.A., *Professor of Home Economics, Emeritus.*
Florence C. Meredith, M.A., *Professor of Home Economics, Emeritus.*
Ruth Major, Ph.D., *Associate Professor of Home Economics.*
Paul L. Scherer, Ed.D., *Associate Professor of Home Economics.*
*Lucille A. Woolsey, Ph.D., *Associate Professor of Home Economics.*
———, *Associate Professor of Home Economics.*
———, *Assistant Professor of Home Economics.*

Marion P. Alves, M.A., *Lecturer in Home Economics.*
Edna Mathieson, M.A., *Lecturer in Home Economics.*
Ella E. Hendrick, A.B., *Associate in Home Economics.*

All students are expected to complete satisfactorily one of the following majors: Consumer Economics; Dietetics; Foods and Nutrition; General Home Economics; Textiles and Clothing. A major consists of 40 units in home economics courses of which at least 22 must be in upper division.

Preparation for the Major

Requirements for all majors: Biology 20 and Chemistry 20 and 20L, or Chemistry 1A–1B, or Chemistry in high school (year course with a grade of C or better) and Chemistry 40, 40L. Economics 1A or Economics 109 and Home Economics 9, 10, 13, 14, 20. Physics 20 or Physics 2A–2B or Physics in high school (year course with a grade of C or better). Psychology 1 or Psychology 101. Sociology 120 or Health Education 108. Speech 11, 101 or 180.

Requirements for Specific Majors

Consumer Economics: Economics 1B, Economics 6A or 106, Sociology 1 or 101.
Dietetics: Biology 104 and 108A–108B, Economics 6A or 106, Psychology 130 or Education 110, Zoology 40.
Foods and Nutrition: Biology 104 and 108A–108B, Zoology 40.
General Home Economics: Home Economics 15 and 25.
Textiles and Clothing: Home Economics 25.

The Majors

Requirements for all Majors: Home Economics 133 and 140.

Additional Requirements for Specific Majors

Consumer Economics with Emphasis on Foods and Nutrition: Home Economics 100 and 103A or 109, Home Economics 141, Home Economics electives (15 or 16 units chosen with the approval of the adviser).
Consumer Economics with Emphasis on Textiles and Clothing: Home Economics 105, 111A–111B, 141, and 164. Home Economics electives (10 units chosen with the approval of the adviser).
Dietetics: Home Economics 100, 102, 103A–103B, 134, 135 and 136. Home Economics electives (3 units chosen with the approval of the adviser).
Foods and Nutrition: Home Economics 100 and 103A. Home Economics electives (18 units chosen with the approval of the adviser).
General Home Economics: Home Economics 100, 105, and 142. Home Economics electives (10 units chosen with the approval of the adviser; recommended: Home Economics 125).
Textiles and Clothing: Home Economics 111A. Home Economics electives (18 units chosen with the approval of the adviser).
Art and Home Economics Major: See page 70.

* Sabbatical leave, 1964–1965.

The Minor

A minor consists of 20 units in home economics courses of which at least 6 must be in upper division. Home Economics 9, 10, and Home Economics 13 or 14, and Home Economics 20 or 25. Home Economics electives (10 units, courses chosen with the approval of the department chairman).

Teaching Credentials

The program of courses leading to the general secondary credential with a teaching major or minor in Home Economics is open only to those students who will complete all requirements for the credential by the end of the spring semester 1965.

Only students who had completed two years of college (60 units) by November 1, 1963, and who were enrolled in a credential curriculum on that date are eligible to be in the program leading to the Special Secondary Teaching Credential in California. Such students should consult with the chairman of the Department of Home Economics.

Students interested in entering a program leading to any of the new standard teaching credentials (as authorized under California State Senate Bill #57—the Fisher Bill) should consult assigned advisers in the Home Economics Department and in the School of Education.

HOME ECONOMICS

Lower Division Courses

9. Elementary Foods and Nutrition. (3) I, II.

Scientific study of foods and nutrition as related to selection, purchase, preparation and service of food.

10. Elements of Nutrition. (2) I, II. Miss Jones

Science of human nutrition with emphasis on food supplies and food selection.

13. Child Development. (2) I, II. Mrs. Alves

Physical, emotional, and social needs of the infant and young child in relation to his membership in the family. Observations of infants and young children.

14. Family Economics. (2) II. Miss Biester

Economic factors involved in utilization of consumer goods.

15. House Interiors and Furnishings. (3) I. Mrs. Mathieson

Two lectures; one three-hour laboratory.

Functional and esthetic factors influencing interiors and furnishings for family homes.

20. Textile Study. (3) I, II. Mrs. Mathieson

Textile fibers and the fabrics made from them; historical background, production, and manufacture; understanding and evaluation of new fibers, new fabrics, and new finishes.

25. Fundamental Principles of Clothing. (3) I, II. Mrs. Woolsey

Two lectures; one three-hour laboratory. Prerequisite: Home Economics 20 or consent of the instructor.

Analysis of clothing design and construction based on textile and design principles.

Upper Division Courses

100. Advanced Food Study. (3) I.

Prerequisite: Chemistry 40, 40L or equivalent, Home Economics 9, Physics 20.

A technical study of food preparation.

102. Experimental Food Study. (3) II.

One lecture; two three-hour laboratories. Prerequisite: Home Economics 9, 100, Chemistry 40, 40L.

Qualitative and quantitative methods in food preparation under controlled conditions.

103A. Human Nutrition. (3) I. Miss Jones

Prerequisite: Biology 108A–108B, Home Economics 10, Zoology 40, or consent of instructor.

Metabolism of carbohydrates, fats, proteins, minerals, vitamins and water in relation to normal nutritional requirements and food intakes.

103B. Human Nutrition. (3) II. Miss Jones

Prerequisite: Home Economics 103A.

Modification of the normal diet necessitated by pathological conditions and metabolic diseases.

104. Household Equipment. (2) II.

Prerequisite: Physics 20.

Physical principles, materials, and economic considerations underlying the selection of household equipment.

105. Advanced Clothing Design. (3) I, II. Mrs. Woolsey

Two lectures; one three-hour laboratory. Prerequisite: Home Economics 25.

A comparative study of the esthetic, physical and psychological aspects of clothing through analysis, experimentation and creative design.

109. Recent Findings in Nutrition. (2) II. Miss Jones

Prerequisite: Home Economics 103A or consent of instructor.

Reviews and discussions of scientific literature with emphasis on current nutritional problems.

111A. Clothing Economics. (3) I. Miss Biester

Prerequisite: Economics 1A or Economics 109.

Interpretation and application of the principles of economics to the solution of clothing problems of individuals and family members.

111B. Clothing Economics. (3) II.
Miss Biester
Prerequisite: Economics 1A or Economics 109.
Contemporary problems of production and distribution of textiles and clothing affecting individuals and members of the family group.

114. Historic Textiles. (3) II. Mrs. Mathieson
Prerequisite: Home Economics 20 or consent of instructor.
Development of textiles from a historical viewpoint. Influence of historic textiles on contemporary designs.

116. History of Costume. (3) I.
Mrs. Mathieson
Analysis of historic style periods in relation to esthetic, cultural, economic, political and social focus from ancient times to the present.

125. Principles of Demonstration. (2) I, II.
Miss Biester
Prerequisite: Home Economics 100.
The selection, organization, and presentation of material for professional home economics demonstrations.

133. Child Development Laboratory. (2) I, II.
Mrs. Alves
One lecture; one three-hour laboratory. Prerequisite: Home Economics 13.
Interpretation of child-care principles through participation in an organized program with preschool children.

134. Institutional Management. (3) II.
Mrs. Hendrick
(Alternates with Home Economics 136)
Prerequisite: Home Economics 9, 10, and consent of the instructor.
Principles of effective management with emphasis on techniques of supervision for controlling food production and costs.

135. Institutional Food Study. (3) I.
Mrs. Hendrick
Prerequisite: Home Economics 9, 10, and consent of the instructor.
Principles and problems involved in the selection, purchase, preparation and service of food for institutions.

136. Institutional Food Service Design and Layout. (3) II. Mr. Scherer
(Alternates with Home Economics 134)
Prerequisite: Home Economics 9, 10, 134 or 135 (may be taken concurrently) and consent of the instructor.
Principles of layout for food service organizations and the selection and maintenance of equipment.

140. Home Management Principles. (2) I, II.
———
Management of human and material resources in the family.

141. Consumers and Markets. (2) I.
Miss Biester
Prerequisite: Economics 1A or 109.
Markets and conditions basic to the solution of consumer problems in the selection of goods.

142. Home Management Laboratory. (2) I, II.
———
Prerequisite: Home Economics 9, 10, 140.
Laboratory experience and directed study in managerial processes related to group living.

150. Family Housing. (3) II. Mr. Scherer
Two lectures; one three-hour laboratory.
Historic, esthetic, economic, and functional aspects of family dwellings; appraisal of house plans in terms of optimum family living.

164. Current Development in Textiles. (3) II.
———
Prerequisite: Home Economics 20.
Analysis and interpretation of progress in textile fiber synthesis, yarn construction and fabric finishing.

194. Group Studies for Advanced Students. (2) I, II. Miss Biester
For majors.
Understanding and evaluating individual and group reactions; contributions made by home and community leaders to civic programs.

199. Independent Studies in Home Economics. (1–4) I, II. The Staff
For majors.

Related Courses in Another Department

Education H 190. Teaching Procedures in Home Economics. (2–3) I, II. ———

Education H 192A–B–C. Student Teaching: Homemaking. (2–2–2) I, II. ———

MATHEMATICS

Paul J. Kelly, Ph.D., *Professor of Mathematics.*
Marvin Marcus, Ph.D., *Professor of Mathematics (Chairman of the Department).*
Henryk Minc, Ph.D., *Professor of Mathematics.*
*Stanley E. Rauch, Ph.D., *Professor of Mathematics.*
Lewis F. Walton, Ph.D., *Professor of Mathematics.*
Herbert S. Bear, Ph.D., *Associate Professor of Mathematics.*
Andrew M. Bruckner, Ph.D., *Associate Professor of Mathematics.*
David M. Merriell, Ph.D., *Associate Professor of Mathematics.*
Adil M. Yaqub, Ph.D., *Associate Professor of Mathematics.*
Thomas K. Boehme, Ph.D., *Assistant Professor of Mathematics.*
Jack G. Ceder, Ph.D., *Assistant Professor of Mathematics.*
Eugene C. Johnsen, Ph.D., *Assistant Professor of Mathematics.*
James Sloss, Ph.D., *Assistant Professor of Mathematics.*
Robert C. Thompson, Ph.D., *Assistant Professor of Mathematics.*
Max L. Weiss, Ph.D., *Assistant Professor of Mathematics.*

Marilyn J. Zweng, Ph.D., *Assistant Professor of Education.*
Hans Schneider, Ph.D., *Visiting Professor of Mathematics.*
David L. Outcalt, Ph.D., *Lecturer in Mathematics.*
Melvin Rosenfeld, Ph.D., *Lecturer in Mathematics.*

Preparation for the Major

The student should have completed two years of algebra and courses in plane geometry and trigonometry in high school. Competence in the following university courses, or their equivalents, is essential for successful upper division study: Mathematics 3A–3B, 4A–4B, 8; Physics 7, 8, 8L.

Requirements for the Major

A minimum of 24 units of upper division mathematics, including at least one course in algebra, one in analysis, and one in geometry.

Graduate-Preparatory. A student preparing for graduate study in mathematics should take Mathematics 111A–111B, 118A, and 119A. Strongly recommended are Mathematics 110, 118B, 122, and 112 or 140.

Applied Mathematics. For those intending to go into industrial work, Mathematics 104, 105, 108, 119A–119B, 120, 122, and 124 are recommended.

Teaching. For those who intend to teach in secondary schools, Mathematics 101A–101B, 103, 109, 113, 115, and 119A are recommended.

Requirements for the Minor

Plane geometry, trigonometry, and one and one-half years of high school algebra are required for admission to a minor in mathematics. The prescribed course of further study is: 15 units selected from Mathematics 3A, 3B, 4A, 4B, 8, 30, 32; and 6 units of upper division mathematics. Recommended upper division courses are Mathematics 101A, 101B, 109, 113.

THE MASTER OF ARTS DEGREE

Candidates for admission must present a bachelor's degree with a major in mathematics or the equivalent of such training. Entering students may be appraised by means of examination in addition to the evaluation of their records; whenever necessary, supplementary course work will be required.

Requirements for the Degree

1. Completion of 24 units of approved course work. A minimum of 12 units must be taken in graduate courses (200 series). The remaining courses may be selected from upper division

* Absent on leave, 1964–65.

or graduate courses in mathematics or physics after approval by the department.
2. Comprehensive written examination.
3. Oral examination.

The Master of Arts Degree in Applied Mathematics

Admission

In addition to the scholarship requirements for graduate study, a candidate must hold a bachelor's degree in mathematics, physics, or engineering. He must also have had undergraduate course work in matrix algebra, differential equations, and advanced calculus (or its equivalent), and also general physics, electricity, and magnetism. Evaluation of the candidate's past work will be made by both the Mathematics and the Physics Departments, and supplemental undergraduate work will be required whenever necessary.

Requirements for the Degree

Completion of twenty-four units beyond the bachelor's degree, of which at least twelve must be in graduate courses, and satisfactory performance in comprehensive written and oral examinations. The course work may be selected according to the candidate's special interests, with the approval of a faculty adviser, but all candidates are required to take at least one graduate course in physics and one graduate course in mathematics (independent of Seminars or Directed Studies). It is expected that approximately one-half the work will be taken in each subject field.

DOCTORAL PROGRAM IN MATHEMATICS

A student advances to candidacy for the degree of Doctor of Philosophy in mathematics after having passed an oral examination. Prior to this, he must have passed a written qualifying examination and have shown proficiency in two foreign languages, normally chosen from French, German, and Russian. The written qualifying examination is in two parts, algebra and analysis.

Information about specific areas of specialization for the doctoral thesis can be obtained from the department.

Teaching Credentials

Either a major or a minor in Mathematics may serve as an appropriate part of the program of studies required for an elementary, secondary, or junior college teaching credential in California.

Twenty-four units of upper division course work are required to satisfy the departmental major. Courses especially recommended for the teaching major are: Mathematics 101A, 101B, 103, 108, 109, 113, and 120.

For a teaching minor, twenty units of mathematics are required. Of these, at least six units must be in upper division courses if the major is in an academic area; at least 12 units must be in upper division courses if the major is in a nonacademic subject matter area. Suggested lower divsion courses are: Mathematics 3A, 3B, 4A, 4B, 8, 30, 32, 38. Upper division courses 101A and 101B are required.

All students preparing for a standard teaching credential with a specialization in elementary school teaching must take Mathematics 38.

For further information concerning teaching credentials, students should confer with designated counselors in the Department of Mathematics and in the School of Education.

MATHEMATICS

Lower Division Courses

3A. Analytic Geometry and Calculus, First Course. (3) I, II. The Staff
Prerequisite: 1½ years of high school algebra, trigonometry.

3B. Analytic Geometry and Calculus, Second Course. (3) I, II. The Staff
Prerequisite: Mathematics 3A.

4A. Analytic Geometry and Calculus, Third Course. (3) I, II. The Staff
Prerequisite: Mathematics 3B.
Includes an introduction to infinite series.

4B. Analytic Geometry and Calculus, Fourth Course. (3) I, II. The Staff
Prerequisite: Mathematics 4A.
Solid analytic geometry and calculus of three dimensions.

8. Algebraic Equations. (3) I, II. The Staff
Prerequisite: Mathematics 3A.
Mathematical induction, the integers, divisibility, complex numbers, polynomials, polynomial equations, systems of linear equations, determinants, introduction to vectors and matrices.

30. Finite Mathematics. (3) II. The Staff
Prerequisite: second-year high school algebra.
Finite problems having applications in the behavioral sciences. Compound statements, sets, combinatorial problems, probability, vectors, matrices.

32. Introduction to Calculus. (3) I, II. The Staff
Prerequisite: 1½ years of high school algebra.
Designed for economics majors and social science students. Not open to students who have passed Mathematics 3A.
A simplified introduction to differential and integral calculus applied to algebraic functions.

38. Fundamentals of Arithmetic. (3) I, II. The Staff
Prerequisite: high school algebra and geometry.
Designed for candidates for the general elementary credential. A study of the real number system and its subsystems. Emphasis on structure and unifying concepts including simple properties of sets.

Upper Division Courses

101A–101B. Fundamental Concepts of Mathematics. (3–3) I or II. The Staff
Two independent courses designed primarily for prospective teachers and minors in mathematics.
Prerequisite: Mathematics 3B or consent of the instructor.
101A. Selected topics in algebra.
101B. Selected topics in geometry.

103. Development of Mathematics. (3) II. The Staff
Prerequisite: six units of upper division mathematics.
A study of the origin, nature, and development of some major mathematical concepts such as: limits, number fields, groups, measure and dimension, invariants of mappings.

104. Numerical Analysis. (3) I. Mr. Sloss
Prerequisite: Mathematics 119A (may be taken concurrently).
Properties of polynomials, measurement of approximation errors, numerical differentiation and integration, iterative methods, polynomial and trigonometric interpolation, Tchebycheff and Legendre polynomials, numerical solution of differential equations.

108. Matrix Theory. (3) I. Mr. Boehme
Prerequisite: Mathematics 8. Not open to students who have passed Mathematics 111B.
Operations on matrices. Elementary theory of vector spaces. Hermite normal form. Permutations, determinants. Symmetric and hermitian matrices and forms. Characteristic roots and vectors. Numerical methods.

109. Foundations of Mathematics. (3) II.
Prerequisite: Mathematics 4A. The Staff
Introduction to symbolic logic, theory of formal proof, axiom systems, consistency and completeness.

110. Set Theory. (3) I. Mr. Ceder
Prerequisite: six units in upper division mathematics.
Fundamentals of set theory, set theoretic construction of the real number system, ordinal numbers, cardinal arithmetic, transfinite methods.

111A–111B. Algebraic Structures. (3–3) Yr. Mr. Marcus
Prerequisite: Mathematics 4B and 8.
Groups, rings, fields, linear algebra.

112. Projective Geometry. (3) II. Mr. Kelly
Prerequisite: Mathematics 4A and 8, or consent of the instructor.
One- and two-dimensional analytic projective geometry.

113. Non-Euclidean Geometry. (3) I. Mr. Kelly
Prerequisite: Mathematics 4A and 8, or consent of the instructor.

115. Number Theory. (3) I. Mr. Yaqub
Prerequisite: Mathematics 4A and 8.
Topics include: number bases, factorization, Diophantine equations, congruences, residues, numerical functions, distribution of primes.

118A–118B. Introduction to Real Function Theory. (3–3) Yr. Mr. Boehme
Prerequisite: senior standing is recommended.
The real number system, elements of set theory, continuity, differentiability, the Riemann integral, functions of bounded variation, implicit function theorems, convergence processes, special topics.

119A. Differential Equations. (3) I, II.
Prerequisite: Mathematics 4B. The Staff

119B. Differential Equations. (3) II.
Prerequisite: Mathematics 119A. The Staff
Further topics in differential equations.

120. Probability. (3) I. Mr. Johnsen
Prerequisite: Mathematics 4B.
Basic concepts of probability, limit theorems, discrete and continuous random variables, derived distribution, some statistical applications.

122. Introduction to Theory of Complex Variables. (3) I. Mr. Bear
Prerequisite: Mathematics 119A.
Analytic functions, integration in the complex plane, analytic continuation, conformal mapping; introduction to applications in the engineering field.

124. Mathematics for Engineers and Physicists. (3) II. The Staff
Prerequisite: Mathematics 119A.
Complex numbers, vectors, divergence, curl. Gauss's and Stokes' theorems; Gamma, Legendre, and Bessel functions; partial differential equations, applications.

127. Infinite Series. (3) I, II. The Staff
Prerequisite: Mathematics 4B.
Sequences, convergence, tests for convergence, power series and trigonometric series, orthogonal functions, closed form summation methods, double series, approximate summation methods, divergent series.

131. Mathematical Statistics. (3) II. The Staff
Prerequisite: Mathematics 120.
Point estimation, random sampling, tests of hypotheses, confidence intervals.

140. Introduction to Differential Geometry. (3) I. Mr. Kelly
Prerequisite: Mathematics 4B and 119A or consent of the instructor.
Vector analysis. Theory of curves and surfaces in Euclidean space.

194. Group Studies for Advanced Students. (1–4) I, II. The Staff
Prerequisite: consent of the instructor.
Lectures and discussions on special topics.

199. Independent Studies in Mathematics. (1–4) I, II. The Staff

Graduate Courses

200. Basic Concepts of Modern Analysis. (3) I. Mr. Ceder
Prerequisite: Mathematics 118A–118B or the equivalent.
This course is a prerequisite to most graduate courses in analysis and is normally taken during the first semester as a graduate student. It contains introductions to metric space topology, Lebesgue measure and integration and functional analysis.

201A–201B. Real Functions. (3–3) I or II.
Prerequisite: Mathematics 200. The Staff
Point sets, Lebesgue measure and Lebesgue integrals and generalizations. Differentiation theorems. Special topics.

202A–202B. Complex Functions. (3–3) I or II. The Staff
Prerequisite: Mathematics 200 is recommended.
Analytic functions, Cauchy integral theorems, analytic continuation, conformal mapping, representations by series, residue theory and special topics.

203. Measure Theory. (3) I. Mr. Bruckner
Prerequisite: Mathematics 200.
Abstract measures and outer measures, measurable functions, integration, Radon-Nikodym Theorem and Fubini Theorem, convergence theorems, measure on locally compact spaces.

209. Set Theory. (3) II. The Staff
A rigorus study of axiomatic set theory; topics include ordinal numbers, transfinite induction, cardinal numbers, cardinal arithmetic, and the Axiom of Choice.

212. Projective Metric Geometry. (3) II.
Prerequisite: Mathematics 112. Mr. Kelly
A study of metric spaces which can be imbedded in a projective space so the metric lines are carried by the projective lines; included are two and three dimensional non-Euclidean geometries.

220A–220B. Modern Algebra. (3–3) Yr. Mr. Minc
Prerequisite: Mathematics 111A–111B.
Groups, rings, fields, ideals, homomorphisms, isomorphisms, quotient structures, vector spaces, linear transformations, matrix rings, duality.

221. Topics in Field Theory. (3) II. Mr. Yaqub
Prerequisite: Mathematics 220B.

222. Topics in Group Theory. (3) I. Mr. Potts
Prerequisite: Mathematics 220A.

223. Topics in Ring Theory. (3) II.
Prerequisite: Mathematics 220A. Mr. Yaqub

224. Topics in Linear Algebra. (3) I.
Prerequisite: Mathematics 220B. Mr. Marcus

226A–226B. Topology. (3–3) I or II.
Prerequisite: Mathematics 200. Mr. Bear
Abstract spaces and their classification. Compact spaces, metric spaces and metrizability. Introduction to dimension and homotopy theory. Topics from algebraic topology.

228. Functional Analysis. (3) II. Mr. Bear
Prerequisite: Mathematics 226A.
Topology of function spaces, measure and integration on locally compact spaces, linear topological spaces, Banach spaces and Banach algebras.

240A–240B. Differential Geometry. (3–3) I, II. The Staff
Prerequisite: Mathematics 200.
Theory of surfaces in Euclidean space. Riemannian space. Topics from differential geometry in the large. Elements of differential geometry in general spaces: geodesics, motions, curvature, topological structure.

245A–245B. Higher Mathematics for Physical Science. (3–3) Yr. Mr. Sloss
Prerequisite: Mathematics 118A and 122 or consent of the instructor.
Introduction to Hilbert space and linear operators. Spectral theory of matrices and ordinary differential operators. Green's functions. Eigenvalue problems of ordinary differential equations. Partial differential equations.

246. Partial Differential Equations. (3) I. The Staff
Prerequisite: Mathematics 118A or consent of the instructor.
Cauchy-Kowalewski theorem. Characteristics. Theory of initial value and boundary value problems for elliptic, hyperbolic and parabolic equations.

247. Methods of Applied Mathematics. (3) II. The Staff

Prerequisite: Mathematics 118A or 124.

Selected topics in the calculus of variations, matrices, nonlinear equations, complex functions, integral equations, stochastic processes.

260. Seminars in Mathematics. (1–3) I, II. The Staff

Topics in analysis, geometry, algebra and numerical analysis, and their applications, by means of lectures and informal conferences with members of the staff. May be repeated for credit.

298. Directed Studies. (1–3) I, II. The Staff

299. Directed Research. (1–6) I, II. The Staff

Education Abroad Courses

Goettingen Center

See section on Education Abroad Program for detailed course descriptions.

GC 115A–115B. Algebraic Number Theory. (6–5)

GC 126A–126B. Introduction to Topology. (2–2)

GC 139A–139B. Programming in ALGOL. (1–1)

MILITARY SCIENCE

George M. Boone, Jr., B.S., Lieutenant Colonel, Infantry, *Professor of Military Science (Chairman of the Department).*
Willard A. Ramirez, M.A., Major, Corps of Engineers, *Associate Professor of Military Science.*
Ronald P. Abreau, Captain, Armor, *Assistant Professor of Military Science.*
Roy C. Price, Sr., B.A., Captain, Armor, *Assistant Professor of Military Science.*

The mission of the Reserve Officers Training Corps is to produce, for the active Army and the Army Reserve, junior officers who have the qualities and attributes essential to their progressive and continued development as officers of the United States Army. While most graduates serve as reserve officers, the ROTC program also has become the principal source of junior officers for the Regular Army through the selection of outstanding students for direct appointment in the Regular Army.

The general military science curriculum is offered. This is designed to correspond to the general academic pattern of the Santa Barbara campus. A graduate of the advanced course will be commissioned so far as possible in a branch of the Army corresponding to his wishes and to his major academic field.

Flight training for qualified ROTC students is offered at no cost to the student during the senior year. Successful participation in the flight training program leads to an FAA private pilot license and prepares the student for the Army Flight School and a tour of duty in Army Aviation.

The United States furnishes the necessary arms, equipment, uniforms, and textbooks. These remain the property of the United States and must be returned at the end of the school year.

To be eligible for enrollment in ROTC a student must be:

1. A male citizen of the United States.
2. Qualified for appointment prior to reaching 28 years of age.
3. A regularly enrolled student of this institution.
4. Physically, mentally and morally qualified.

Deferments. Under the provisions of the University Military Training and Service Act—June 1951 (Public Law 51, 82nd Congress) regularly enrolled ROTC students may be deferred from induction through the Selective Service System if qualified and selected for deferment. No student is deferred automatically by virtue of the fact that he is enrolled as an ROTC student but must meet all of the following criteria:

1. Have sufficient time remaining as a college student to permit completion of the ROTC course.
2. Must meet the physical, mental, moral, and leadership qualities required for a commission in the Army.
3. Meet the University's minimum academic standards.
4. Apply to the head of the Department of Military Science for deferment.
5. Sign a deferment agreement.

In signing the deferment agreement a student pledges that he will complete the four-year ROTC course, that he will accept a commission if offered, that he will serve not less than two years if called, and that he will remain a member of the Regular or Reserve component of the Army until the sixth anniversary of the receipt of his commission unless sooner terminated. If his services are not needed by the Army he may be called for a six-month period. In this case he then agrees to remain a member of the Regular or Reserve component of the Army until the eighth anniversary of his commission.

Generally, students may apply for deferment, if otherwise eligible, during the second semester of college studies during each of the freshman and sophomore years.

Basic Course

The purpose of this course is to qualify the student as a leader, to help prepare him to discharge his duties as a citizen, and to awaken in him an appreciation of the obligation of citizenship.

Students who have had previous military training or service may be credited with such

advanced standing in ROTC as the Chancellor and the Professor of Military Science jointly determine.

Students claiming advanced standing must file a petition on the day of registration and should present at that time supporting documentary evidence such as a certificate of service or transcript of record of previous training.

Advanced Course

The purpose of this course is to provide college-trained junior officers to meet the needs of the active Army and to provide a pool of trained leaders who will be available in the event of a national emergency. Students successfully completing the course agree to accept a commission in the United States Army Reserve, if tendered, and to serve six months or two years on active duty as determined by the national defense situation.

A student who wishes to obtain a direct appointment in the Regular Army through selection as a distinguished military graduate, must possess the following qualifications: outstanding qualities of military leadership, high moral character, and definite aptitude for the military service. He should be in the upper half of the University academically and must demonstrate his leadership through his accomplishment in recognized campus activities. He must complete successfully the advanced course in military science as well as the four-year curriculum of the University, and obtain a degree.

Students for the advanced course are selected from those who are physically qualified citizens between the ages of sixteen and twenty-six who have completed the basic course or its equivalent and who have at least two academic years remaining to complete work for a baccalaureate or advanced degree.

Advanced course students receive officer-type uniforms which become their property upon successful completion of the course. In addition, they receive commutation of subsistence equivalent to the value of the Army ration (currently about $27 per month), as well as the use of arms, equipment, and textbooks.

Advanced course students are required to attend a summer training camp of six weeks' duration, normally between the third and fourth years. The United States furnishes uniforms, equipment, and subsistence. In addition, the student is paid at the rate of pay of an Army private (now $78 per month), plus five cents per mile to and from camp.

A contractual agreement between the student and the United States government is signed upon entry into the Advanced Course.

In addition ot the requirements listed in 103A–103B and 104A–104B, the student will, in both his junior and senior years, select a course of at least three units from the four following fields: Effective Communication; Science Comprehension; General Psychology; Political Development and Political Institutions.

In the event that a particular subject was required in the student's normal academic curriculum during his freshman and sophomore years, electives must be selected either from another general area or an advanced subject in the same area. However, if the subject selected was not required in the student's academic curriculum during his freshman and sophomore years, complete freedom of selection from the four academic areas is permissible.

The Professor of Military Science will evaluate and approve the elective subjects selected. Consideration will be given to the value of the subject in furthering the professional qualification of the student as a prospective commissioned officer in the United States Army.

Military Science as a Minor

For male students who complete an academic subject matter major, military science may serve as a minor in the program of studies required for a standard teaching credential with a specialization in secondary teaching. A student wishing to secure a teaching credential should confer with designated counselors in the Military Science Department and in the School of Education.

Students pursuing the military science minor should be those primarily concerned with completing work toward an Army commission.

MILITARY SCIENCE

Lower Division Courses

1A–1B. Basic Course, General Military Science. (1½–1½) Yr. The Staff

Classroom 1 hour; leadership laboratory 1 hour.

Prerequisite: acceptance by the Professor of Military Science.

Introduction to military organization, purpose of ROTC, individual weapons, and United States Army and National Security. Special emphasis is given to the importance of the citizen-soldier to the American way of life.

2A–2B. Basic Course, General Military Science. (1½–1½) Yr. The Staff

Classroom 2 hours; leadership laboratory 1 hour.

Prerequisite: Military Science 1A and 1B, or equivalent military training.

American Military History, map reading, and introduction to basic tactics. The foundation is laid for future officer training in the event the individual aspires to commissioned status.

Upper Division Courses

102. ROTC Summer Camp. (3)

Prerequisite: at least one semester of advanced ROTC.

Practical application of all phases of military life, including qualification firing, tactical exercises, and leadership training.

103A–103B. Advanced Course, General Military Science. (3–2) Yr. The Staff

Classroom 3 hours; leadership laboratory 1 hour in fall semester and classroom 2 hours; leadership laboratory 1 hour in spring semester, plus fulfillment of the requirement listed above. A physical fitness test and M1 rifle exercise are required in addition to scheduled classroom hours.

Prerequisite: Military Science 1A–1B and 2A–2B or equivalent, and acceptance by the Professor of Military Science, with the approval of institutional authorities.

Leadership Theory; Methods of Instruction and Military Teaching Principles; Function and Mission of the Arms and Services; Continuation of Basic Tactics and Small Unit Tactics; Principles of Communications.

104A–104B. Advanced Course, General Military Science. (2–3) Yr. The Staff

Classroom 2 hours; leadership laboratory 1 hour in fall semester; and classroom 3 hours; leadership laboratory 1 hour in spring semester, plus fulfillment of the requirement listed above.

Prerequisite: Military Science 1A–1B, Military Science 2A–2B or equivalent, and Military Science 103A–103B.

Military Staff Operations, Logistics; Army Administration; Military Law; The role of the United States in World Affairs; Service Orientation designed to prepare the student for entry on active service either as a commissioned officer in the U. S. Army Reserve or the Regular Army.

MUSIC

Lloyd Browning, M.A., *Professor of Music.*
Van A. Christy, Ph.D., *Professor of Music.*
Erno Daniel, P.S.D., *Professor of Music.*
Maurice E. Faulkner, Ph.D., *Professor of Music.*
Karl Geiringer, Ph.D., *Professor of Music.*
*John E. Gillespie, Ph.D., *Professor of Music.*
Stefan Krayk, License de Concerts, *Professor of Music.*
Clayton Wilson, M.M., *Professor of Music.*
*Roger E. Chapman, Ph.D., *Associate Professor of Music.*
Dorothy Westra, M.S.M., *Associate Professor of Music.*
Carl Zytowski, M.A., *Associate Professor of Music (Acting Chairman of the Department).*
Helen M. Barnett, M.A., *Associate Professor of Music, Emeritus.*
Dolores M. Hsu, Ph.D., *Assistant Professor of Music.*
Stanley D. Krebs, Ph.D., *Assistant Professor of Music.*
Ira Lehn, M.M., *Assistant Professor of Music.*
Wendell A. Nelson, D.M., *Assistant Professor of Music.*
Roger Nyquist, M.M., *Assistant Professor of Music.*

Peter R. Fricker, F.R.C.O., *Visiting Associate Professor of Music.*
J. Bunker Clark, Ph.D., *Lecturer in Music.*
David Gordon, Ph.D., *Lecturer in Music.*

Paganini Quartet in Residence:
Henri Temianka, *Lecturer in Music.*
Stefan Krayk, License de Concerts, *Professor of Music.*
Albert Gillis, *Lecturer in Music.*
Lucien Laporte, *Lecturer in Music.*

Students majoring in music are required to take entering placement examinations in theory and in performance, to pass sophomore auditions, to participate in student recitals, and to engage in at least one music activity per semester with or without credit. Students transferring from other institutions are required to complete at least two semesters within the department.

General Education Requirements

See pages 40–41. The department recommends History 4A–4B.

Preparation for the Major—(18–22 units) Music 5A–B–C, 12, and 33 (number of units required depends upon proficiency at entrance).

The Major in Music

This is a general major in (1) theory-history, (2) sacred music, or (3) performance. Forty-eight units in music are required. As a requirement for graduation, a senior audition must meet standards approved by the faculty of the department. Details concerning this audition are available in the departmental office.

The Major—(26 units required) Music 102A, 106A, 112A–112B, and 13 units in any one of the following emphases:

1. Theory–History. Thirteen units in theory and/or history courses selected with the guidance of the faculty adviser.

2. Sacred Music. Music 120, 173A–173B, and five units in related courses in music selected with the guidance of the faculty adviser.

3. Performance. Thirteen units in performance courses selected with the guidance of the faculty adviser.

* Absent on leave 1964–65.

The Major in Music with Special Performance Emphasis

This is a specialized performance major in any of the following areas: piano, organ, voice, flute, oboe, clarinet, saxophone, bassoon, trumpet, French horn, baritone horn, trombone, tuba, violin, viola, violoncello, contrabass, and percussion. A high standard of performance must be demonstrated in a special entrance examination. Fifty-four units in music are required. As a requirement for graduation, a senior public recital must meet standards approved by the faculty of the department. Details concerning this recital are available in the departmental office.

The Major—(32 units required) Music 102A, 112A–112B, and 21 units in performance courses selected with the guidance of the faculty adviser.

Requirements for the Minor

The minor in music consists of 20 units, at least six of which must be in upper division courses. Consult the departmental office for specific requirements.

THE MASTER OF ARTS IN MUSIC

See general requirements, pages 57–58.

The requirements for candidates in music are:

(1) A minimum of 24 units distributed as follows: (a) Eleven graduate units in Music 200, 260A–260B, and 266. (b) Thirteen units to be elected with the guidance of the graduate adviser. At least five of these units must be in graduate courses, the remainder may be in upper division courses. These 13 units must include two units in a liberal arts area outside of music and two units of upper division performance. However, if the student's work in performance is on the graduate level, the upper division requirement in performance will be waived and the student will be allowed a maximum of four units of graduate level performance which will include the presentation of a graduate recital. Following guidance examinations taken at entrance the department may specify certain prerequisites to remedy deficiencies in the student's undergraduate background. Normally such courses will not be included in the 24 units described above.

(2) A reading knowledge of French, German, or Italian to be demonstrated satisfactorily by examination. In certain cases the department may accept substitution of another foreign language for one of those listed above.

(3) Depending upon the chosen field of emphasis a thesis, or a composition (more than one movement and at least 20 minutes in length), to be satisfactorily completed. Normally more than two semesters will be needed to complete the above requirements.

Teaching Credentials

The Teaching Major

A major in music may serve as an appropriate part of the program of studies required for an elementary, secondary, or junior college teaching credential in California. In addition to courses listed above for the departmental major, the teaching major requires 25–27 units in the following: Music 21, 22, 23, 24, 20A–20B (or 25), 108A, 121 (or 120), MI 190, MV 190, M 192A–B–C–D–E–F. Some of these units may be used as electives within the major.

The Teaching Minor

Twenty units are required (6 must be upper division): Music 11, 15, 122, and 13 units selected with approval of adviser including an upper division course in the history and appreciation of music.

For further information concerning teaching credentials, students should confer with designated counselors in the Department of Music and in the School of Education.

MUSIC

Lower Division Courses

5A–B–C. Music Theory. (5–5–4) I, II, I.
For the major. Mr. Gordon, Mr. Krebs

11. Basic Musicianship and Voice. (3) I, II.
The Staff (Mr. Christy in charge)
For the classroom teacher. Not open to freshmen.

12. Introduction to History and Analysis of Music. (4) II. Mrs. Hsu
Prerequisite: Music 5C or equivalent. For the major.

15. Music History and Appreciation. (2) I, II. The Staff (Mr. Nelson in charge)
Three hours weekly. For the nonmajor.

16. Masterworks of Music. (2) I, II. Mrs. Hsu
Prerequisite: Music 15 or consent of the instructor. For the nonmajor.

20A–20B. Elementary Voice. (2–2) Yr. Mr. Christy
For the instrumental major.

21. Strings. (2) I. Mr. Krayk
Primarily for the credential.

22. Brass. (2) I. Mr. Faulkner
Primarily for the credential.

23. Woodwinds. (2) II. Mr. Wilson
Primarily for the credential.

24. Percussion. (2) II. Mr. Faulkner
Primarily for the credential.

25. Intermediate Voice. (1) I, II. The Staff (Mr. Christy in charge)
For the vocal major. May be repeated for credit up to 4 units.

26. Intermediate Strings. (1) I, II. Mr. Krayk, Mr. Lehn
May be repeated for credit up to 4 units.

27. Intermediate Woodwinds. (1) I, II. Mr. Wilson
May be repeated for credit up to 4 units.

28. Intermediate Brass. (1) I, II. Mr. Faulkner
May be repeated for credit up to 4 units.

29. Intermediate Percussion. (1) I, II. Mr. Faulkner
May be repeated for credit up to 4 units.

30. Organ. (1) I, II. Mr. Nyquist
Prerequisite: Music 31A–31B or equivalent and consent of instructor.
May be repeated for credit up to 4 units.

31A–31B. Basic Piano. (1–1) I, II. The Staff

33. Piano. (1) I, II. Mr. Browning, Mr. Daniel, Mr. Nelson
Prerequisite: Music 31A–31B or equivalent.
May be repeated for credit up to 4 units.

Activities

Courses 34 through 47 may be repeated for credit up to 4 units.

34. The Chamber Singers. (1) I, II. Miss Westra

35. Women's Glee Club. (1) I, II. Miss Westra

36. Men's Glee Club. (1) I, II. Mr. Zytowski

37. Modern Chorale. (1) I, II. Mr. Christy

38. Opera Workshop. (1) I, II. Mr. Zytowski

41. Piano Ensemble. (1) I, II. Mr. Browning, Mr. Nelson

42. Orchestra. (1) I, II. Mr. Daniel

***43. String Orchestra.** (1) I, II. Mr. Krayk

44. String Ensemble. (1) I, II. Mr. Krayk, Mr. Lehn

45. Brass Choir. (1) I, II. Mr. Faulkner

46. Woodwind Ensemble. (1) I, II. Mr. Wilson

47. Band. (1) I, II. The Staff

Upper Division Courses

102A–102B. Counterpoint. (3–3) II, I. Mr. Fricker, Mr. Wilson
Prerequisite: Music 5C or equivalent.
102A, primarily vocal (modal) counterpoint in two or more voices, with an introduction to instrumental (eighteenth century) counterpoint.
102B, instrumental or tonal counterpoint.

***104R. Score Reading.** (2) I, II. Mr. Daniel
Prerequisite: Music 5C.

105. Advanced Keyboard Harmony. (2) I, II. Mr. Nyquist
Prerequisite: Music 5C or equivalent.

106A–106B. Orchestration. (2–2) I, II. Mr. Faulkner
Prerequisite: Music 5C or equivalent. 106A or its equivalent is prerequisite to 106B.

108A–108B. Composition. (3–3) I, II. Mr. Fricker
Prerequisite: Music 5C or equivalent.

***109. Advanced Composition.** (3) I, II. Mr. Fricker
Prerequisite: Music 108B or equivalent.

112A–112B. History and Analysis of Music. (4–4) Yr. Mr. Geiringer
Prerequisite: Music 5C, 12. For the major.

113. History and Literature of Russian Music. (2) I. Mr. Krebs
Prerequisite: Music 15 or equivalent.
A survey of Russian music from its beginnings, but emphasizing the romantic and modern (Soviet) periods. For the nonmajor.

* Not to be given, 1964–65.

115. Symphonic Literature. (2) I, II. Mr. Krebs
Prerequisite: Music 15 or equivalent. For the nonmajor.

***116. History and Literature of Hispanic-American Music.** (2) I. Mr. Gillespie
Prerequisite: Music 15 or equivalent. For the nonmajor.

117. History and Literature of Opera. (2) I, II. Mr. Zytowski
Prerequisite: Music 15 or equivalent. For the nonmajor.

118. History and Literature of Chamber Music. (2) I, II. Mr. Lehn
Prerequisite: Music 15 or equivalent. For the nonmajor.

119. History and Literature of Keyboard Music. (2) II. Mr. Nelson
Prerequisite: Music 15 or equivalent. For the nonmajor.

120. Choral Conducting. (2) I, II. Mr. Daniel
Prerequisite: Music 104R or consent of instructor.

121. Instrumental Conducting. (2) I, II. Mr. Daniel
Prerequisite: Music 104R or consent of instructor.

122. Fundamentals of Conducting. (2) I, II. Mr. Christy
Prerequisite: Music 11, 31A–31B. For music minors.

125. Advanced Voice. (1–2) I, II. The Staff (Mr. Christy in charge)
May be repeated for credit up to 8 units.

126. Advanced Strings. (1–2) I, II. Mr. Krayk, Mr. Lehn
May be repeated for credit up to 8 units.

127. Advanced Woodwinds. (1–2) I, II. Mr. Wilson
May be repeated for credit up to 8 units.

128. Advanced Brass. (1–2) I, II. Mr. Faulkner
May be repeated for credit up to 8 units.

129. Advanced Percussion. (1–2) I, II. Mr. Faulkner
May be repeated for credit up to 8 units.

130. Advanced Organ. (1–2) I, II. Mr. Nyquist
May be repeated for credit up to 8 units.

131. Harpsichord. (1–2) I, II. Mr. Clark
Prerequisite: consent of instructor.
May be repeated for credit up to 12 units.

* Not to be given, 1964–65.

132A–132B. Piano Accompanying. (2–2) I, II. Mr. Browning

133. Advanced Piano. (1–2) I, II. Mr. Browning, Mr. Daniel, Mr. Nelson
May be repeated for credit up to 12 units.

***173A–173B. History and Literature of Church Music.** (3–3) Yr. Mr. Gillespie
Prerequisite: Music 112A.

177. Opera and Music Drama. (3) I.
Prerequisite: Music 112B. Mr. Geiringer
A study of the history and literature of opera and music drama from its origins to the present day.

***178. History of Musical Instruments.** (2) I.
Prerequisite: Music 112A. Mr. Geiringer
A study of the development and use of musical instruments, from classical antiquity to the present day.

181. Studies in Baroque Music. (3) II. Mr. Geiringer
Prerequisite: Music 112A–112B or consent of the instructor.
For the major.

182. Studies in Classic Music. (3) I, II. Mr. Geiringer
Prerequisite: Music 112A–112B or consent of instructor.
For the major.

183. Studies in Romantic Music. (3) II. Mrs. Hsu
Prerequisite: Music 112A–112B or consent of instructor.
For the major.

184. Studies in Contemporary Music. (3) I, II. Mr. Krebs
Prerequisite: Music 112A–112B or consent of instructor.
For the major.

189. Collegium Musicum. (1) I, II. Mr. Geiringer

197. Senior Recital. (2) I, II. The Staff
Open to all qualified seniors.

198. Senior Auditions. (1–4) I, II. The Staff
Prerequisite: consent of instructor.

199. Independent Studies in Music. (1–4) I, II. The Staff
Open to qualified seniors.

Activities

Courses 134 through 147 may be repeated for credit up to 6 units.

134. The Chamber Singers. (1) I, II. Miss Westra

135. Women's Glee Club. (1) I, II. Miss Westra

136. Men's Glee Club. (1) I, II. Mr. Zytowski

137. Modern Chorale. (1) I, II. Mr. Christy

138. Opera Workshop. (1) I, II. Mr. Zytowski

141. Piano Ensemble. (1) I, II. Mr. Browning

142. Orchestra. (1) I, II. Mr. Daniel

***143. String Orchestra.** (1) I, II. Mr. Krayk

144. String Ensemble. (1) I, II. Mr. Krayk, Mr. Lehn

145. Brass Choir. (1) I, II. Mr. Faulkner

146. Woodwind Ensemble. (1) I, II. Mr. Wilson

147. Band. (1) I, II. The Staff

Graduate Courses

200. Bibliography and Research Techniques. (3) I. Mrs. Hsu

***201A–201B. Notation.** (3–3) Yr. Mr. Fricker

208A–208B. Graduate Composition. (2–2) Yr. Mr. Chapman

220A–220B. Graduate Performance. (2–2) Yr. The Staff

***250. Pro-Seminar in Music Theory.** (3) I, II. Mr. Chapman

260A–260B. Pro-Seminar in History and Literature. (3–3) Yr. Mr. Geiringer

266. Pro-Seminar in Contemporary Music. (3) I, II. Mr. Fricker

***270A–270B. Pro-Seminar in Music Education.** (2–2) Yr. Mr. Christy

289. Transcription, Editing, and Performance of Early Music. (2) I, II. Mr. Geiringer

297. Individual Studies for Graduate Students. (1–4) I, II. Mr. Geiringer

Related Courses in Another Department

Education ME 190. Elementary Music Education. (2) I, II. The Staff
Prerequisite: Music 11, 15. Elementary education majors must have completed, or be concurrently enrolled in EL 190 (Elementary Procedure).

Education MI 190. Methods of Teaching Instrumental Music. (2) I. Mr. Faulkner
Prerequisite: Music 21, 22, 23. Includes methods in both elementary and secondary schools.

Education MV 190. Methods of Teaching Vocal Music. (2) II. Mr. Christy
Prerequisite: Music 20A–20B or equivalent. Includes methods in both elementary and secondary schools.

Education M 192A–B–C–D–E–F. Student Teaching: Music. (1) I, II. The Staff
Prerequisite: Ed. MI 190, Ed. MV 190. May be repeated for credit up to 6 units, although only 4 units are required.

Education Abroad Courses

Goettingen Center

See section on Education Abroad Program for detailed course descriptions.

GC 175A–175B. Selected Problems in Bach Philology. (4–3).

GC 176A–176B. The German Lied from Schubert to Brahms. (3–2).

* Not to be given, 1964–65.

PHILOSOPHY

*Herbert Fingarette, Ph.D., *Professor of Philosophy.*
Harry K. Girvetz, Ph.D., *Professor of Philosophy (Chairman of the Department).*
Alexander Sesonske, Ph.D., *Associate Professor of Philosophy.*
Paul D. Wienpahl, Ph.D., *Associate Professor of Philosophy.*
Noel Fleming, Ph.D., *Assistant Professor of Philosophy.*
Fred Hagen, Ph.D., *Assistant Professor of Philosophy.*
John King-Farlow, Ph.D., *Assistant Professor of Philosophy.*
Joseph S. Ullian, Ph.D., *Assistant Professor of Philosophy.*

Hague D. Foster, A.B., *Acting Assistant Professor of Philosophy.*
Charlotte Stough, M.A., *Acting Assistant Professor of Philosophy.*

Offerings in philosophy are not only intended to provide undergraduate preparation for graduate study in philosophy; they are designed to contribute to general education and to preprofessional training in areas (e.g., law) where early specialization is normally discouraged. In numerous instances courses are directly related to specific disciplines or groups of disciplines for which they are intended to supply a philosophical framework (e.g., "Aesthetics" for the arts, "Philosophy of Science" for the natural sciences, etc.). The staff should be consulted for the courses best adapted to these several purposes.

In addition to the major in philosophy, a minor is available which can be adapted to the needs of students in such areas as natural science, social science, literature, art, and language.

Philosophy Majors

The major in philosophy is of two kinds: (I) that designed to prepare the student for graduate study in philosophy, and (II) that for the student who is intending to go on to graduate work in another field, for example, law, or the student whose interests are limited to a liberal education leading to the Bachelor of Arts degree.

Major I

Lower Division—Philosophy 20A–20B, and 31, Biology 1 and 2, Physics 20, 21 (or 101, 21); or Biology 20 (or Botany 20), and Physics 7, 8, 8L; History 4A–4B.

Upper Division—24 units in upper division courses which must include the following: Philosophy 135A–135B, 111 (or 181), 184 (or 188). Three courses from the following: Philosophy 152, 153, 162, 163, 166.

Major II

Lower Division— Philosophy 20A–20B, and 3 or 31 and History 4A–4B.

Upper Division—24 units in upper division philosophy courses.

Combination Major. Students interested in a combination major with emphasis on social science see page 183.

The Minor

Required—Philosophy 20A–20B and 14 units in upper division which may be selected on the basis of their relevance to the student's major.

REQUIREMENTS FOR THE MASTER'S DEGREE

For the general requirements see pages 57–58. In addition, candidates for the master's degree in philosophy must satisfy the following:

1. Completion of 24 units of approved course work. A minimum of 12 units in graduate philosophy courses (200 series). The remaining courses to be selected from upper division or graduate courses in other subjects after approval by the department.

* Absent on leave, fall 1964.

2. Comprehensive written examination or completion of a thesis. The choice of examination or thesis, as well as the topic of the latter, will be determined in consultation with members of the staff.

3. Oral examination on the comprehensive written examination or on the thesis.

4. Demonstration of proficiency in one of the following languages: Greek, Latin, French, or German. (Preparation for the language requirement may not be counted as part of the 24 units required for the degree.)

5. Admission to Candidacy. The student who wishes to obtain the M.A. degree must first be admitted to candidacy. Work on the thesis or for the comprehensive examination cannot be formally commenced until the student has satisfied the following requirements:

(a) By the sixth week of the semester before that in which the student expects to obtain the degree he must pass a written examination in History of Philosophy and one of the following fields:

Ethics and aesthetics, logic and the philosophy of science, metaphysics and epistemology, social and political philosophy. In the event of failure to pass, the student may repeat the examination once.

(b) The student must pass the foreign language reading examination some time prior to taking the examinations specified in (a).

(c) By the beginning of the semester in which the student expects to obtain the degree, he must petition the Graduate Council for advancement to candidacy. This petition is allowable only after satisfaction of requirements (a) and (b).

Requirements for Graduate Study Not Leading to a Degree. Students are permitted to do advanced studies in philosophy without working for a higher degree. Such students need not have majored in philosophy, although they must have taken a number of courses in philosophy. Only such of the regulations as apply to admission and standards concern these students.

PHILOSOPHY

Lower Division Courses

1. Short Introduction to Philosophy. (3) I, II.
The Staff

Not open for credit to students who have completed Philosophy 6A.

Philosophical ideas in terms of which western civilization seeks to understand itself and the world of which it is a part.

3. Logic in Practice. (3) I or II.
Mr. Hagen, Mr. Sesonske

Open to all students.

Practical reasoning, argumentation, and the analysis of language as instruments of sound thinking in everyday life.

5. Ideas and Practice of Philosophy. (3) I, II.
The Staff

Not open for credit to students who have completed 6A.

An introduction to ways of thinking philosophically and to philosophical ideas. For the nonmajor who desires to emphasize reading in original texts and frequent oral and written discussion. Enrollment limited to 20.

6A–6B. Introduction to Philosophy.
(3–3) I, II. The Staff

20A–20B. History of Philosophy. (3–3) I, II.
Mr. Sesonske, Mr. Wienpahl

20A. From the Pre-Socratics to St. Thomas.

20B. From 1200 on.

31. Deductive Logic. (3) I and II.
Mr. Foster, Mr. Hagen, Mr. Ullian

Modern symbolic logic. Includes propositional calculus, theory of quantification and the logic of relations.

Upper Division Courses

Philosophy 1, 5, or 6A–6B, or 20A–20B, or consent of the instructor is required for all upper division courses.

100. Science, Folklore, and Philosophy.
(3) I or II. Mr. Girvetz

An examination of philosophy as a response to the conflict between science and traditional belief. Directed primarily to nonphilosophy majors.

104. Ethics. (3) I, II.
Mr. Fingarette, Mr. Girvetz, Mr. Sesonske

Analysis of the basic ideas and principles involved in moral conduct and deliberation including the concepts of good, right, obligation and conscience.

108. Social Philosophy. (3) I or II.
Mr. Fingarette, Mr. Girvetz

Basic concepts and methods of the social sciences; the relationship of the social to the biological and physical sciences; social policy-making.

109. Philosophy of Liberalism. (3) I or II.
Mr. Girvetz

An examination of the assumptions and implications of classical and contemporary liberalism.

111. Metaphysics. (3) I or II.
Mr. Hagen, Mr. Wienpahl

112. Philosophy of Religion. (3) I or II.
Mr. Hagen, Mr. King-Farlow
The existence and nature of God, human free will, problem of evil, idea of immortality, rivalry of living religions, and philosophy of mysticism.

118. Philosophy in the Nineteenth Century. (3) I or II. Mr. Girvetz, Mr. Hagen
German idealism, romanticism, and the philosophical implications of nineteenth-century scientific developments.

121. Political Philosophy. (3) I or II.
Mr. Girvetz
Prerequisite: Philosophy 1, or 6A–6B, or 20A–20B, or upper division standing in Political Science, or consent of the instructor.
Analysis of fundamental political conceptions: the state, sovereignty, political obligation, natural rights, natural law, etc.

123. Studies in Asian Philosophy. (3) I or II.
Mr. Fingarette
Prerequisite: six units of Philosophy or East Asian Studies, or consent of the instructor.
Reading and critical analysis of basic texts in Confucian, Taoist, Buddhist and other East Asian philosophies. Attention will also be given to the relationships of these ideas with Western thought.

124. Philosophy of Science. (3) I or II.
Mr. Foster, Mr. Ullian
Procedures of the deductive and inductive sciences, with attention to the problems for theory of knowledge which they raise.

133. Philosophy of Language. (3) I or II.
Mr. Hagen, Mr. Sesonske
Modern linguistics. The structure and function of the languages of mathematics, the sciences, history, aesthetics, ethics, etc. General theories of symbolism. Logical Positivism and Semantics. Form and content in language systems. General system theory. Theory of communication. Possibilities of synthesis.

135A–135B. Contemporary Philosophy. (3–3) I, II.
Mr. Hagen, Mr. Ullian, Mr. Wienpahl
Prerequisite: Philosophy 20B, or consent of the instructor.
Positivism, pragmatism, existentialism, analytic philosophy, and other tendencies in contemporary thought.

136. Aesthetics. (3) I or II.
Mr. Fingarette, Mr. Fleming, Mr. Sesonske
Analysis of the aesthetic experience, the aesthetic object, the creative act and art criticism.

146. Philosophy in Literature. (3) I or II.
Mr. Fingarette, Mr. Sesonske
Study of philosophical ideas expressed in the literature of the Western world.

152. Plato. (3) I. Mr. Sesonske, Miss Stough
Prerequisite: Philosophy 20A, or consent of the instructor.

153. Aristotle, (3) II. Miss Stough
Prerequisite: Philosophy 20A, or consent of the instructor.

157. Medieval Philosophy. (3) I.
Mr. King-Farlow
Prerequisite: Philosophy 152 and 153, or consent of instructor.

162. Continental Rationalism. (3) I.
Prerequisite: Philosophy 20] Mr. Wienpahl
The philosophies of Descartes, Spinoza, and Leibniz.

163. British Empiricism. (3) II.
Mr. Fingarette, Mr. Fleming
Prerequisite: Philosophy 20B.
The philosophies of Locke, Berkeley, and Hume.

166. Kant. (3) I or II.
Mr. Hagen, Mr. Wienpahl
Prerequiiste: Philosophy 162 or Philosophy 163, or consent of the instructor.
An examination of the philosophy of Kant with special attention to the *Critique of Pure Reason.*

180. Philosophical Psychology. (3) I or II.
Mr. Fingarette, Mr. Hagen
An examination of the nature of psychological theories. Special attention to be given to such concepts as "action," "motive," "intention," "reason," "wishing," "desiring," and the "unconscious." Generous use of illustrative material from psycho-analytic literature.

181. Theory of Knowledge. (3) I, II.
Mr. Fingarette, Mr. Hagen
Prerequisite: Philosophy 20A–20B or consent of the instructor.

184. Advanced Logic. (3) I or II. ———
Prerequisite: Philosophy 31 or consent of the instructor.
Foundations of mathematics, of physics; applications of symbolic logic to philosophical problems.

188. Theory of Value. (3) I or II.
Mr. Fingarette, Mr. Girvetz, Mr. Sesonske
Prerequisite: Philosophy 1 or 104 or 136.

194. Group Studies in Philosophy. (3) I, II.
The Staff
Course may be repeated for credit up to 6 units.

198. Readings in Philosophy. (1–3) I, II.
The Staff
Admission by special arrangement.
Individual readings of the works of specific philosophers. This course may be taken for no more than three semesters and for a maximum of three units each semester.

199. Independent Studies in Philosophy. (1–4) I, II. The Staff
Admission by special arrangement.

Graduate Courses

251. Seminar in Metaphysics. (3) I or II. Mr. Wienpahl
Prerequisite: Philosophy 111 or consent of the instructor.

252. Seminar in Aesthetics. (3) I, II. Mr. Sesonske
Prerequisite: Philosophy 136 or consent of the instructor.

254. Seminar in Theory of Value. (3) I or II. Mr. Sesonske
Prerequisite: Philosophy 104 or consent of the instructor.

255. Seminar in Political and Social Philosophy. (3) I or II. Mr. Fingarette, Mr. Girvetz
Prerequisite: Philosophy 108 or 109 or consent of the instructor.

256. Epistemology. (3) I or II. Mr. Fingarette
Prerequisite: Philosophy 135A–135B, or consent of the instructor.
A seminar in theory of knowledge dealing with the problems of perception, memory, belief, and knowledge.

264. Seminar in Logic and Methodology of Science. (3) I or II. ———
Prerequisite: Philosophy 31, 124, or consent of the instructor.

270. Seminar in History of Philosophy. (3) I or II. The Staff
Prerequisite: Philosophy 20A–20B and consent of the instructor.

298. Individual Study: Selected Problems in Philosophy. (1–6) I, II. The Staff
Prerequisite: consent of the instructor.

299. Directed Research. (2–4) I, II. The Staff
Prerequisite: graduate standing and consent of the instructor.

Education Abroad Courses

Goettingen Center

See section on Education Abroad Program for detailed course descriptions.

GC 187A–187B. Logic, Language and Reality. (3–3).

PHYSICAL AND HEALTH EDUCATION

Theodore Harder, Ed.D., *Professor of Physical Education.*
Jean Hodgkins, Ed.D., *Professor of Physical Education (Vice-Chairman of the Department).*
Steven M. Horvath, Ph.D., *Professor of Physical Education.*
*Joseph E. Lantagne, Ed.D., *Professor of Physical Education.*
Marian H. Anderson, M.S., *Associate Professor of Physical Education.*
Terry H. Dearborn, Ed.D., *Associate Professor of Physical Education.*
Arthur J. Gallon, Ed.D., *Associate Professor of Physical Education.*
Mayville S. Kelliher, Ed.D., *Associate Professor of Physical Education.*
Ernest D. Michael, Ph.D., *Associate Professor of Physical Education.*
Lyle G. Reynolds, Ed.D., *Associate Professor of Physical Education.*
Rene H. Rochelle, Ph.D., *Associate Professor of Physical Education (Chairman of the Department).*
*Elvera Skubic, Ph.D., *Associate Professor of Physical Education.*
Stanley L. Williamson, M.S., *Associate Professor of Physical Education (Intercollegiate Athletics Director).*
Wilton M. Wilton, Ed.D., *Associate Professor of Physical Education.*
Winifred W. Hodgins, M.A., *Associate Professor of Physical Education, Emeritus.*
Gladys R. Van Fossen, M.A., *Associate Professor of Physical Education, Emeritus.*
Barbara L. Drinkwater, Ph.D., *Assistant Professor of Physical Education.*
Patricia Sparrow, Ph.D., *Assistant Professor of Physical Education.*
Ernest N. Carter, M.A., *Supervisor of Physical Education.*
Willard M. Hammer, Ed.D., *Associate Supervisor of Physical Education.*
Samuel Adams, M.A., *Assistant Supervisor of Physical Education.*
Ralph Barkey, M.A., *Assistant Supervisor of Physical Education.*
Harold Fairly, M.A., *Assistant Supervisor of Physical Education.*
David Gorrie, M.S., *Assistant Supervisor of Physical Education.*
Rona J. Sande, M.Ed., *Assistant Supervisor of Physical Education.*
Raymond H. Thornton, M.A., *Assistant Supervisor of Physical Education.*
Katherine Barthels, M.A., *Junior Supervisor of Physical Education.*
Edward R. Doty, M.A., *Junior Supervisor of Physical Education.*
Karen Hogarth, M.A., *Junior Supervisor of Physical Education.*
Margaret Hupp, M.S., *Junior Supervisor of Physical Education.*
Emma Lou O'Brien, *Junior Supervisor of Physical Education.*
Carol A. Roberts, M.A., *Junior Supervisor of Physical Education.*

**Frances Colville, Ph.D., *Lecturer in Physical Education.*
Jack C. Curtice, M.A., *Lecturer in Physical Education.*
Marilyn Flint, Ph.D., *Lecturer in Physical Education.*
Peter Riehlman, B.A., *Lecturer in Physical Education.*

Services Offered

1. A program of activities contributing to the development and maintenance of physical fitness for all students.
2. Courses in physical education, health education, and recreation emphasizing theory and practice in desirable activities.
3. Preparation for students who wish to enter the profession of physical education, health education, recreation, or physical therapy.
4. Preparation for teaching the fundamentals and principles of physical education on the preschool, kindergarten, elementary, secondary and college levels, and for organizing and administering the program of physical education in these fields.
5. Intramural activities and corecreational sports.
6. Intercollegiate athletic competition.

* Sabbatical leave in residence, 1964–65.
** Absent on leave, 1964–65.

Requirements for All University Students

1. A medical examination by the University physician is required of every student enrolled in the University. Upon recommendation by the University physician, a student who is unable to enroll in activity courses must enroll in special individual adaptation classes.

2. For graduation, all students are required to complete a minimum of 2 units in physical education activities. This requirement must be satisfied by enrollment in activity courses throughout four consecutive semesters.

3. A student more than twenty-three years of age at the time of initial registration will be excused from physical education, but recreational courses are recommended.

Requirement for All Men Students—The graduation requirement is fulfilled by the completion of four sections of activities offered in Physical Education 1, as follows: Entering students who have not completed the total requirement are required, in their first semester, to enroll in P.E. 1–1, Developmental Activities, in which swimming and certain other tests are given, and recommendations based thereon are provided the individual student. Those not proficient in swimming and at least one individual recreational activity should include elementary courses in these activities in completing their requirement. The four sections of activity required must be completed by taking one-half unit during each semester of the first two years. Courses may be taken only once for credit.

Requirements for All Women Students—The course requirements depend upon the student's major field of study. The following courses are suggested for students whose major is in one of these two fields:

Early childhood education: Physical Education 1, sections 13, 23.

Elementary education: Physical Education 1, section 16A, and 138.

It is suggested that all other students undertake one semester each of game activity, rhythmic activity, body mechanics, and an elective course.

Requirements for the Major in Physical Education

Students may obtain the Bachelor of Arts degree in physical education upon completion of not less than 120 units of university work, including all requirements of the College of Letters and Science and the major courses outlined below for men and women.

Students with senior standing at the time of admission to the University must complete 24 units in residence, at least 12 of which must be in physical education.

Students desiring to specialize in the field of physical education must be physically sound, and have a high degree of neuromuscular coordination. Candidates for the major or minor are required to demonstrate, before entering the upper division, that they possess a fair degree of skill in the various activities included in the lower division activity classes.

MEN

General Requirements—English 1A–1B; Foreign Language 0–12 units; English or Foreign Literature, 3 units; Humanities elective 3 units; Physics or Chemistry, Biology 20; Zoology 25 and 40; Philosophy 1 or 5; Psychology 1, 11 or 101; Fine Arts (History and Appreciation), 4–5 units; History and Political Science, 6 units; Sociology elective; Physical Education, 2 units.

Preparation for the Major—Physical Education 1–16A, 20, 36; other activity courses, Health Education 1; Home Economics 10.

The Major—Physical Education 101, 102, 105, 130, 131, 140, 154, 170, 171, 172, 173, 174, 175, 176, 177; selected activity courses; Health Education 101; Education 119P.

WOMEN

General Requirements—English 1A–1B; Foreign Language 0–12 units; English or Foreign Literature, 3 units; Humanities elective 3 units; Physics or Chemistry, Biology 20; Zoology 25 and 40; Philosophy 1 or 5; Psychology 1, 11 or 101; Fine Arts (History and Appreciation), 4–5 units; History and Political Science, 6 units; Sociology elective; Physical Education, 2 units.

Preparation for the Major—Physical Education 1 (at least 3 units), 20, 32A or 32B, 46; Health Education 40.

The Major—Physical Education 101, 102, 105, 118, 130, 131, 142, 163, and Education 119P.

Requirements for a Preparatory Course in Physical Therapy

A four-year program of preparation for entrance into accredited schools of physical therapy is available through the Physical Education Department. Upon successful completion of the program, the student is awarded a Bachelor of Arts degree in physical education and will have met the requirements for entrance into physical therapy schools as established by the American Physical Therapy Association. Complete details concerning course requirements may be obtained from the department chairman.

Requirements for the Dance Emphasis in Physical Education

Students wishing to emphasize the dance in physical education may take the following program leading to a B.A. degree:

Preparation for the Major—Physical Education 1, Activities (3 units), Physical Education 20, 43A–43B, 44, 46, and 47, Health Education 40.

The Major—Physical Education 101, 102, 105, 118, 130, 131, 156, 158, 161, and 163. One controlled elective in dance.

General Education Requirements—See department chairman.

Requirements for the Minor in Physical Education

Men

A minimum of 20 units. Courses 20, 36, 130, 154; other units selected from courses 170, 171, 172, 173, 174, 175, 176, 177, 178, 179; selected activity courses; Health Education 1, 2. Other courses as per direction of the Physical Education Department.

Women

A total of 20 units. Courses Physical Education 1 (5 units—see adviser), 46, 20 or 130, 163, 164 or 138**, Health Education 40 or 48**, and one course from the following courses: Physical Education 101, 105, 118. Consult department chairman for complete program.

Requirements for the Minor in Health Education

A total of 20 units. Courses 1, 100, 101, 7 units; elect 13 units from courses 48, 103, 105, 106, 107, 108, Home Economics 10, Psychology 33, Biology 180.

Professional Training in Recreation

A program of preparation for leadership in recreation is available through the Departments of Physical and Health Education. The 20-unit program is open to both men and women. The major in physical education, although advantageous, is not required for the program in recreation.

Required basic program includes 12 units, as follows: Health Education 2, Physical Education 140, 141, 143, 145. Eight additional units are selected from a variety of courses related to outdoor activities, social activities, arts and crafts. Complete details may be obtained from the department chairman.

THE MASTER OF ARTS DEGREE

In addition to the general admission requirements for the degree of Master of Arts, specific requirements governing the work for the degree in physical education are as follows:

1. Candidates must complete at least 24 units of course work plus a thesis. At least 15 units must be in the major and at least 12 of the 24 units must be taken in the 200 series.

** For elementary school level.

2. A maximum of 4 units in education is allowed toward the degree. Education 190 and 192 may not be utilized to satisfy the 24-unit requirement.

3. Each master's degree candidate is expected to select as an area of concentration one of the theoretical disciplines which underlies physical education such as the natural sciences, social sciences, psychology, humanities or fine arts. Three to 6 units of the student's elective work must be taken in this area of concentration.

Teaching Credentials

Either a major or a minor in Physical Education may serve as an appropriate part of the program of studies required for an elementary, secondary, or junior college teaching credential in California when coupled with an academic subject-matter minor or major.

A student who wishes to complete the requirements for a teaching major in Physical Education must complete the major as specified above plus an academic subject-matter minor. In addition, six units of Physical Education 200 series courses (including Physical Education 201) are required. Women must also complete the following courses: Physical Education 160, 162, and 164.

A teaching minor in Physical Education must be coupled with a major in an academic subject-matter area according to the regulations of the California Education Code.

Students interested in the minor and those wishing further information concerning the credential curricula are urged to confer with designated counselors in the Department of Physical Education and in the School of Education.

Physical Education for Men and Women

Activity Courses

1. Fundamental Sports Activities. (½) I, II. The Staff

The physical education activities listed below are designed to provide a basic program by which students may improve their physical condition, secure useful neuromuscular development, and gain recreational skills. Any course listed may be elected for credit by juniors and seniors. The letter A indicates elementery level; B, intermediate level; and C, advanced level. Permission to take the advanced courses, without having previously completed the elementary courses, must be received from the Department of Physical Education. Classes meet two periods weekly and provide instruction and supervised practice in the fundamentals of each activity. With the exception of Individual Adaptations, a course may be taken only once for credit. Students with physical handicaps, recommended for restricted, remedial, or other special programs by the University physician or the Department of Physical Education, may fulfill the graduation requirement by enrolling in the section in Individual Adaptations. Of the four semesters required, men must take one semester in the freshman year in Developmental Activities.

*1. Developmental Activities, I, II.
3A–B–C. Archery, I, II.
4A–B–C. Badminton, I, II.
*5A. Elementary Baseball, I, II.
*6A–6C. Basketball, I, II.
‡7A–7C. Boating and Sailing, I, II.
8A–B–C. Body Mechanics, I, II.
‡9A–B–C. Bowling, I, II.
*10A–10C. Boxing, I, II.
*14A–14C. Cross Country, I.
15A–B–C. Modern Dance, I, II.
15D. Modern Dance Composition, I, II.
16A–B–C. Folk Dance, I, II.
17A–17B. Social Dance, I, II.
18A–B–C. Fencing, I, II.
†19. Field Sports, I.
*21A–21C. Football, I, II.
24A–B–C. Golf, I, II.
25A–B–C. Gymnastics, I, II.
27. Individual Adaptations, I, II.
28. Recreational Games, I, II.
29. Rhythmic Exercise, I, II.
*30A–30C. Soccer, I, II.
†31. Softball and Basketball, I, II.
34A–B–C. Swimming, I, II.
35. Synchronized Swimming, I, II.
38A–B–C. Tennis, I. II.
*39A–39C. Track and Field, II.
40A–40B. Volleyball, I, II.
*41A–41B. Water Polo, I.
43A–B–C. Weightlifting, I, II.
*44A–B–C. Wrestling, I, II.

* Courses open to men only.
† Courses open to women only.
‡ A fee is charged for use of equipment and facilities not owned by the University. Direct payment will be made by the student.

Lower Division Courses

All courses are open to men and women unless otherwise indicated.

18. Physical Education for Elementary School Children. (1) I, II. Mrs. Anderson
The conduct of physical education programs in the elementary school.

20. Introduction to Physical Education. (2) I, II. The Staff
An interpretation of the field designed to give the prospective major student an understanding of its scope.

30A–30B. Appreciation of Sports. (2–2) I, II. Mr. Hammer, Mr. Wilton
Lecture, demonstrations, and selected learning experiences for the general University student leading to an understanding and appreciation of athletics and recreational sports.

†32A–32B. Principles of Officiating. (1–1) I, II. Miss Drinkwater
Prerequisite: Physical Education 1-19, 1-31, 1-34A, 1-34B.
The principles, ethics and standards of officiating team and individual sports. Lecture and laboratory.

***36. Activities for Gymnasium and Field.** (2) I, II. Mr. Williamson
One lecture, two laboratory periods.
Apparatus work, tumbling, stunts, group games, combatives, marching, sports, and contests, emphasizing the elementary and junior high school age groups.

***40. Intercollegiate Sports.** (½) I, II. The Staff
Competitive sports open, by permission of the instructor, to students qualified and eligible to participate in intercollegiate athletics. A special medical examination is required prior to competition. Sports offered include:

5. Baseball, II
6. Basketball, I, II
14. Cross Country, I
21. Football, I
24. Golf, II
25. Gymnastics, I
34. Swimming, II
38. Tennis, II
39. Track, II
41. Water Polo, I
44. Wrestling, I

42. Dance Workshop. (1) I, II. Miss Sparrow
Projects in performance, production, choreography and directing. Students may enroll for 1 unit per semester and the course may be repeated up to 4 units combined in Physical Education 42, 156 sequence.

43A–B–C. Modern Dance. (1–1–1) I, II. Miss Sparrow
Analysis and exploration of movement as an expressive medium.

44A. Introduction to Ballet. (1) I, II. Miss Sparrow
Analysis and exploration of technical and expressive elements of the ballet.

45. History and Appreciation of Dance. (2) I, II. Miss Sparrow
A cultural background and appreciation of the various forms of dance, and the relation of dance to other art forms from the primitive expression to contemporary trends.

46. Analysis of Rhythm and Movement. (1) I, II. Mrs. O'Brien
Rhythmic analysis, notation and rhythmic form in the temporal and special arts. Lecture and laboratory.

47. Introduction to Modern Dance Composition. (2) II. Miss Sparrow
Prerequisite: Physical Education 43A–B–C.
Fundamentals of compositional form with experiences in the development of dance studies.

48. Fundamentals of Mime. (2) I, II. The Staff
The historical development of mime including Classic, Medieval, Italian Commedia Dell'Arte, and contemporary mime. Practical experience in traditional forms and experimental work in creative expression.

Upper Division Courses

101. Kinesiology. (3) I, II. Miss Flint, Mr. Kelliher
Lectures and laboratory. Prerequisite: Zoology 25, 40.
Physical structure and muscular movements in human physical performance. Application of anatomical concepts and physical laws to joint and muscle action.

102. Physical Divergencies. (3) I, II. Miss Flint, Mr. Michael
Prerequisite: Physical Education 101 and Zoology 25.
Limitations, capacities, corrective and adaptive needs of common physical divergencies.

105. Physiology of Exercise. (3) I, II. Mr. Michael, The Staff
Prerequisite: Zoology 25, 40.
The neuromuscular mechanism and the metabolic, muscular, circulatory, and respiratory responses in physical exercise, and their integration by means of the nervous system.

118. Motor Learning. (3) I, II. The Staff
Prerequisite: Psychology 1.
Psycho-motor learning and performance.

130. Principles of Physical Education. (3) I, II. Miss Hodgkins, Mr. Wilton
The nature and history of physical education; its place and contributions in the educational program and in the world of today.

* Courses open to men only.
† Courses open to women only.

131. Administration of Physical Education. (3) I, II. Mr. Gallon, The Staff
Prerequisite: Physical Edueation 130.
Organization and administration of programs of health and physical education in elementary and secondary schools.

138. Physical Education in the Elementary School. (3) I, II. Mrs. Anderson
Prerequisite: Physical Education 1-16A, or consent of the instructor.
Principles and practices in the conduct of programs in the elementary school. Non-physical education majors only.

140. Community Recreation. (3) I, II. Mr. Williamson
Fundamentals of community recreation, its objectives, principles, program, procedure, and administration.

141. Youth-Serving Organizations. (3) I.
Prerequisite: Physical Education 140. Mr. Carter
Community youth organizations, their objectives and administration.

142. Recreation in Society. (3) I, II.
Prerequisite: Sociology 1. Miss Hodgkins
The place of leisure and recreation in the modern community.

143. Theory and Techniques of Recreation. (3) II. Mr. Williamson
Prerequisite: Physical Education 140.
Theory and techniques of directing community recreation activities.

145. Field Training in Recreation. (2) I, II. The Staff
Supervised experience in leading community recreation activities.

°151A–151B. Theory of Officiating. (1–1) Yr. The Staff
Analysis and interpretaiton of rules of various sports, including football, basketball, baseball, track and field.

154. Conditioning of Athletes and Care of Injuries. (2) I, II. Mr. Wilton
Prerequisite: Health Education 2.
Modern principles and practices of conditioning athletes, with emphasis on the prevention and care of athletic injuries, bandaging, therapy, health habits, and protective equipment.

156. Dance Workshop. (1) I, II. Miss Sparrow
Advanced projects in performance, production, choreography and directing. Students may enroll for 1 unit per semester and the course may be repeated up to 4 units combined in Physical Education 42, 156 sequence.

158. Dance of the 16th–19th Centuries. (3) II.
Prerequisite: Physical Education 47. The Staff
Choreographic and music forms of the Baroque and Renaissance periods.

° Courses open to men only.

160. Modern Dance in Education. (2) I, II. Miss Sparrow
Lecture and laboratory. Prerequisite: Physical Education 1-15A, 1-15C, 1-15D, 46.
History and theory of dance. The use of dance materials in secondary schools, with opportunities for observation and teaching.

161. Dance of the Modern Period. (2) I, II. Miss Sparrow
Lecture and laboratory. Prerequisite: Physical Education 1-15A, 1-15C, 1-15D, 46.
Styles and trends in modern dance considered in relation to contemporary developments in other arts. Practice in choreography.

162. Elementary School Programs. (2) I, II. Miss Drinkwater
Principles and practices in the conduct of programs in the elementary school. Majors and minors only.

†163. Theory of Physical Education. (4) I. Miss Drinkwater
Analysis of performance and development of advanced skills in sport and dance activities; integration of principles of motor learning, kinesiology and physiology.

†164. Practicum in Physical Education. (2) II. Miss Drinkwater
Prerequisite: Physical Education 101, 105 and 163.
Application of movement theory in selected activities appropriate to secondary schools and colleges.

170–177. Theory and Teaching of Sports. (1) I, II. The Staff
Prerequisite: experience or proficiency test in subject area. One lecture and one laboratory per week.
Organization and conduct of class or contest. °170. Football; °171. Basketball; °172. Baseball; °173. Track and Field; 174. Racket Sports; 175. Swimming; °176. Individual Sports; 177. Rhythm and Dance.

178. Water Safety. (1) I, II. Mr. Dearborn
Prerequisite: Physical Education 179 or current American Red Cross senior lifesaving certificate. Leads to the American Red Cross water safety instructor's certificate.

179. Lifesaving. (1) I, II. The Staff
One lecture and one pool period per week. Leads to American Red Cross senior lifesaving certificate.

°180. Varsity Intercollegiate Sports. (½) I, II. The Staff
Competitive sports open to students qualified and eligible to participate in intercollegiate athletics. A special medical examination is required prior to competition.
5. Baseball, II
6. Basketball, I, II
14. Cross Country, I
18. Fencing, I
21. Football, I
24. Golf, II

† Courses open to women only.

25. Gymnastics, I
34. Swimming, II
38. Tennis, II
39. Track, II
41. Water Polo, I
44. Wrestling, I

194. Group Studies for Advanced Students. (1–2) I, II. The Staff

Prerequisite: consent of the instructor.

A critical review of literature in selected areas. A. Aquatics; B. Adaptive physical education; C. Physiology; D. Modern dance.

197. Senior Seminar. (2) I, II. Miss Hodgkins

Prerequisite: qualified senior students and consent of the instructor.

A study of the current literature of the field.

199. Independent Studies in Physical Education. (1–4) I, II. The Staff

Open only to senior students approved by the department chairman and the faculty members involved.

Study of special problems in physical education or recreation.

Graduate Courses

201. The Secondary School Curriculum in Physical Education. (3) I, II. Mr. Harder, Miss Hodgkins

A study of the physical education programs in American schools with an emphasis on the analysis and observation of the various types of programs at the secondary level.

207. Environmental Physiology. (3) I. Mr. Horvath

Prerequisite: consent of instructor.

Lectures on the physical, chemical, and biotic influences of the environment on man, and the adaptive changes in response to environment.

218. Physiology of Aging. (3) II. Mr. Horvath

Prerequisite: background in social sciences, biology and psychology and consent of the instructor.

Physiological alterations occurring consequent to the aging processes. A study of the changes which occur in the human organism from the moment of birth, through the developmental years to maturity and to biological senescence, with sociological and psychological correlates.

235. Evaluation Procedures in Physical Education. (3) I. Mr. Rochelle

Prerequisite: Education 119P.

The application of advanced statistics to problems in physical and health education with special reference to tests and other research.

250. Philosophies of Health, Physical Education, and Recreation. (3) II. Miss Hodgkins, Mr. Wilton

Prerequisite: Physical Education 130 and an introductory course in philosophy or equivalent.

An examination of philosophical thinking in the field, the early historical thought that influenced current beliefs, and implications for the future. A further study by the student directed toward the formulation of his professional philosophy in health, physical education, and recreation.

252. Critical Issues in Health, Physical Education, and Recreation. (3) I, II. Mr. Harder, Miss Hodgkins

Current problems, trends, and research in health, physical education, and recreation; their scope and implications.

260. Seminar in Contemporary Research. (1) I, II. Mr. Horvath

Presentation and discussion of current research.

276. Fundamentals of Research. (3) I, II. Mr. Michael, The Staff

Prerequisite: Education 119P and Psychology 5, or equivalents.

Research in health, physical education, and recreation. Review of the research methods, techniques, and devices used.

280. Scientific Factors of Motor Learning. (3) I, II. The Staff

Prerequisite: Psychology 1, Physical Education 235, 276.

A critical examination of research in the area of motor learning, environmental, physiological and psychological factors influencing the learning and performance of motor skills.

299. Directed Research. (2–4) I, II. The Staff

Related Courses in Another Department

Education 119P. Measurement and Evaluation in Physical Education. (2) I, II. Mr. Rochelle

Education P 190. Teaching Procedures in Physical Education. (2) I, II. Mr. Wilton

Education P 192A–B–C. Student Teaching: Physical and Health Education. (2–2–2) I, II. The Staff

Health Education for Men and Women

Lower Division Courses

1. Personal Health Problems. (2) I, II. Mr. Reynolds

Factors influencing health, with special attention to personal health problems of heredity and reproduction, nutrition, excretion, exercise, rest, recreation, mental hygiene, and the evaluation of health information.

2. Survival and First Aid. (1) I, II. Mr. Dearborn

Factors in personal preparedness for survival in the nuclear age, together with elements of accident prevention and first aid treatment. Standard and advanced certificates are available for qualified students.

40. Personal and School Health. (3) I, II.
Miss Flint

Essentials of healthful living, world health problems, and the school health program.

48. Health Program for Elementary Schools. (2) I, II. The Staff

Health information needed by the elementary classroom teacher for effective participation in the school health program, and for the protection and promotion of the physical, mental, and social health of students and teachers.

Upper Division Courses

100. Organization and Administration of the School Health Program. (2) I. (Alternate years) Mr. Dearborn

101. School Health Education. (3) I, II.
Mr. Dearborn, The Staff

Prerequisite: Health Education 1.

Objectives, principles, scope, and content of health education for elementary and secondary schools, with study and practice in the selection, use, and evaluation of teaching methods and materials.

105. Safety Education and Accident Prevention. (2) I, II. The Staff

Causes and prevention of the principal types of accidents occurring on the streets and highways, in recreation, and in the home and school.

107. Community Health Agencies. (2) I.
The Staff

The organization and program of community health agencies, including those of private, voluntary, official, and professional nature.

108. Marriagė and Parenthood. (3) I, II.
Mr. Lantagne

Tenets underlying successful marriage, emphasizing physiological and emotional factors.

199. Independent Studies in Health Education. (1–4) I, II. The Staff

Open only to advanced students approved by the department chairman and faculty members involved.

PHYSICAL SCIENCE

The interdepartmental major in physical science is a curriculum designed for students desiring a wider but less specialized knowledge of the several physical sciences. Not available for elementary or general secondary credential. This major is supervised by the Department of Chemistry, and interested students should contact that department for information and for assignment to an adviser.

Preparation for the Major

Mathematics 3A–3B, 4A, Physics 7, 8, 8L, 9, 9L, Chemistry 1A–1B, Geology 2, 2L, 3, 3L or Geology 2, 2L and 6A–6B, or Geology 101 and selected upper division geology courses.

The Major

Twenty additional units selected from chemistry, geology, and physics, with at least 6 units in two different fields and 12 units in the upper division.

PHYSICS

Herbert P. Broida, Ph.D., *Professor of Physics.*
*Robert M. Eisberg, Ph.D., *Professor of Physics.*
Harold W. Lewis, Ph.D., *Professor of Physics.*
Paul H. Barrett, Ph.D., *Associate Professor of Physics (Chairman of the Department).*
Jose Fulco, Ph.D., *Associate Professor of Physics.*
Leonard H. Hall, Ph.D., *Associate Professor of Physics.*
Glen E. Schrank, Ph.D., *Associate Professor of Physics.*
William C. Walker, Ph.D., *Associate Professor of Physics.*
William C. Ramsay, Ph.D., *Assistant Professor of Physics.*
———, *Assistant Professor of Physics.*
———, *Assistant Professor of Physics.*

Allan S. Krass, Ph.D., *Lecturer in Physics.*
Jack S. Margolis, Ph.D., *Lecturer in Physics.*

Preparation for the Major

The following courses (42 units) are required in preparation for the physics major: Physics 7, 8, 8L, 9, 9L, 10, Mathematics 3A–3B, 4A–4B, Chemistry 1A–1B, Biology 1, and Mathematics 119A.

The Major

The following upper division courses (24 units) are required for physics majors: Physics 105A, 110A–110B, 128L, 129L, 108 (or 112), and 127A–B–C.

Requirements for the Minor

The Department of Physics offers a minor in physics consisting of 20 units of basic physics courses, at least 6 of which are in upper division courses. Students wishing a minor in physics should consult the department chairman before enrolling as a minor.

Related Curriculum: Physical Science. Physics may be offered as one area of concentration for partially fulfilling the requirements of the interdepartmental major in physical science. See Physical Science for details.

An interdepartmental minor in physical science is available. Consult the adviser for the physical science major for details.

GRADUATE PROGRAM IN PHYSICS

The Department offers work leading to the Ph.D. and M.A. degrees in Physics. Candidates for admission must present a bachelor's degree with a major in physics or the equivalent. Entering students will be appraised by means of examination and evaluation of records; where necessary, supplementary courses will be required.

Requirements, Master of Arts

1. Completion of 24 units of approved course work. A minimum of 12 units is to be taken in graduate courses (200 series). The remaining courses may be selected from upper division or graduate courses in mathematics, chemistry or physics, after approval by the department.
2. A reading knowledge of scientific French, German, or Russian.
3. Completion of Plan I or II:
   I. Thesis and final oral examination.
   II. Written comprehensive examination and final oral examination.

* Absent on leave, spring 1965.

Requirements, Doctor of Philosophy

1. Satisfactory completion of a set of comprehensive graduate qualifying examinations covering the major fields of physics.
2. Reading knowledge of two of the following languages: French, German, or Russian.
3. Completion and oral defense of a doctoral dissertation.

Teaching Credentials

Either a major or a minor in Physics may serve as an appropriate part of the program of studies required for an elementary, secondary, or junior college teaching credential in California. A student wishing to secure any of these credentials should confer with designated counselors in the Department of Physics and in the School of Education.

ASTRONOMY

Lower Division Course

1. Introduction to Astronomy. (3) I. The Staff
Lecture, three hours.
The nature and structure of the solar system, our local galaxy, and the universe. Current cosmological theories. Discussion of experimental and observational techniques. Occasional evening periods of observation.

PHYSICS

Lower Division Courses

2A–2B. General Physics. (4–4) Yr. The Staff
Lecture, three hours; laboratory, three hours. Prerequisite: two years of high school algebra or its equivalent and trigonometry or its equivalent.
Mechanics, properties of matter, heat, sound, light, electricty, atomic physics. Primarily for students preparing for the scientific professions other than physics, chemistry, and engineering.

***4B. General Physics.** (4) I. The Staff
Lecture, three hours; laboratory, three hours. Prerequisite: Physics 4A and integral calculus.
Electricity, magnetism, and modern physics.

***4C. General Physics.** (4) II. The Staff
Lecture, three hours; laboratory, three hours. Prerequisite: Physics 4A and integral calculus.
Heat, light, and modern physics.

***4D. General Physics.** (2) II. The Staff
Lecture, one hour; laboratory, three hours. Prerequisite: Physics 4B.
Introductory electronics.

7. General Physics. (3) I. The Staff
Prerequisite: Mathematics 3A to be taken concurrently.
Mechanics and properties of matter.

8. General Physics Lecture. (3) II. The Staff
Prerequisite: Physics 7 and Mathematics 3A.
Electricity and magnetism.

8L. General Physics Laboratory. (1) II. The Staff
Prerequisite: Physics 7, Physics 8 to be taken concurrently.
Experimental work in mechanics, electricity and magnetism.

* To be discontinued after 1964–65.

20. Concepts of Physics. (3) I, II. The Staff
Lecture, three hours.
An introduction to the important concepts and achievements of physics. (Not open to students who have completed satisfactorily a high school or college course in physics.)

21. Basic Physics Laboratory. (1) I, II. The Staff
Laboratory, three hours.
May be taken separately following Physics 20 or 101 or concurrently with either of these courses.
Experiments and demonstrations illustrating basic physical concepts.

Upper Division Courses

101. Descriptive Modern Physics. (3) I or II. The Staff
Lecture, three hours. Prerequisite: a high school or college course in physics.
Modern physical theories with applications chosen from atomic, nuclear, fundamental particle, solid state, and space physics.

105A. Analytic Mechanics. (3) I. Mr. Eisberg, Mr. Hall
Lecture, three hours. Prerequisite: Physics 4A–B–C, integral calculus. Recommended: differential equations.
Dynamics and statics of particles and rigid bodies.

108. Classical Wave Motion. (3) I or II. Mr. Walker
Lecture, three hours. Prerequisite: Physics 4A–B–C, integral calculus. Recommended: differential equations.
Physical and mathematical properties of wave motion with mechanical and electromagnetic illustrations. Physical optics.

110A–110B. Electricity and Magnetism. (3–3) Yr. The Staff
Lecture, three hours. Prerequisite: Physics 105A and Mathematics 119A.
Elementary mathematical theory of electricity and magnetism; steady and varying currents; electronic circuits. Maxwell's equations and electromagnetic radiation.

112. Heat and Thermodynamics. (3) I or II.
Mr. Broida, Mr. Hall

Lecture, three hours. Prerequisite: Physics 4A–B–C and Mathematics 4B.

Thermodynamics and an introduction to kinetic theory and statistical mechanics.

124L. Nuclear Physics Laboratory. (1) II.
Mr. Barrett

Laboratory, three hours. Prerequisite: upper division status in physical or biological sciences.

Radioactive measurements and operations; health physics; radiochemical and radiobiological tracer experiments.

127A. Principles of Modern Physics. (3) II.
Mr. Eisberg, Mr. Walker

Lecture, three hours. Prerequisite: Physics 105A, Mathematics through differential equations.

Introduction to the Special Theory of Relativity, transition from Classical to Quantum Physics. Introduction to Quantum Mechanics.

127B. Principles of Modern Physics. (3) I.
Mr. Eisberg, Mr. Walker

Lecture, three hours. Prerequisite: Physics 127A.

Atomic physics; further development of Quantum Mechanics, structure and spectra of multi-electron atoms, x-rays.

127C. Principles of Modern Physics. (3) II.
Mr. Barrett, Mr. Eisberg

Lecture, three hours. Prerequisite: Physics 127B.

Nuclear physics; scattering theory, basic properties and structure of nuclei, nuclear forces, fundamental particles.

128L–129L. Modern Physics Laboratory.
(1–2) Yr. The Staff

Laboratory: 128L three hours, 129L six hours.

Prerequisite: Physics 110A and 127A. Physics 128L is prerequisite to 129L.

The use and calibration of electrical and electronic instruments. The techniques and experiments that form the foundation of atomic, nuclear, and solid state physics.

130. Introduction to Solid State Physics.
(3) I or II. Mr. Hall, Mr. Walker

Lecture, three hours. Prerequisite: Physics 127A–127B or permission of the instructor.

Lattice structure; thermal, dielectric, and magnetic properties; free electron and band theory of metals; semiconductors, imperfections.

199. Independent Studies in Physics.
(1–4) I, II. The Staff

Directed individual study, normally experimental, open to qualified seniors in the Department of Physics.

Graduate Courses

200. Mathematical Methods in Physics.
(3) I or II. The Staff

Lecture, three hours.

Selected topics from linear algebra, tensor analysis, partial differential equations, complex variables, integral equations, variational calculus, group theory.

201A–201B. Topics in Advanced Physics.
(3–3) Yr. The Staff

Lecture, three hours.

The course content will vary in different years and will be selected from such topics as atomic physics, statistical mechanics, experimental and theoretical nuclear physics, solid state.

205. Classical Dynamics. (3) I.
Mr. Eisberg, Mr. Schrank

Lecture, three hours.

Equations of Lagrange, Hamilton, and Jacobi; variational formulation; transformation theory; relativistic particle; motion of rigid bodies.

210A–210B. Electromagnetic Theory.
(3–3) I, II. Mr. Lewis, Mr. Schrank

Lecture, three hours.

210A. Classical theory of the electromagnetic field, solutions and applications of Maxwell's equations.

210B. Relativistic electrodynamics, special relativity, electron theory.

215. Quantum Mechanics. (3) II. Mr. Hall

Lecture, three hours.

Fundamental principles; wave mechanics, matrix mechanics; perturbation theory; spin and orbital angular momentum; applications to atomic, molecular or nuclear systems.

216. Applications of Quantum Mechanics.
(3) I. The Staff

Lecture, three hours. Prerequisite: a graduate course in quantum mechanics.

Treatment of problems in atomic and molecular structure, absorption and emission of radiation, and scattering. Introduction to relativistic quantum theory; the Dirac equation.

217. Quantum Field Theory. (3) II. The Staff

Lecture, three hours.

Introduction to relativistic quantum field theory, quantization of the electromagnetic field. Selected topics in quantum field theory, e.g., elementary particles, many body problem, superconductivity.

219. Statistical Mechanics and Thermodynamics. (3) I or II. The Staff

Lecture, three hours. Prerequisite: graduate standing in physics, mathematics, engineering, or chemistry.

Classical statistical mechanics, the statistical interpretation of thermodynamics, quantum statistics, Fermi-Dirac and Bose-Einstein distributions. Applications of statistical methods to various areas of physics.

223. Quantum Theory of Solids. (3) I or II.
Lecture, three hours. Mr. Hall, Mr. Walker

Theory of electrons and phonons in crystalline solids; band and transport theory, electric, magnetic and optical properties. Collective electron theory.

224. Nuclear Physics. (3) II.
Mr. Barrett, Mr. Eisberg

Lecture, three hours. Prerequisite: Physics 215, 216, and an elementary course in nuclear physics.

Nuclear forces, nuclear structure, nuclear reactions, elementary particles.

231A–231B. Relativity. (3–3) I, II.
Mr. Schrank
Prerequisite: Physics 205 and 210A–210B.
This is a two-term course in which the main emphasis is on special relativity the first term. Topics to be covered include an analysis of the Lorentz group, relativistic formulations of the principal branches of physics, and conservation laws.

260A. Seminar in Advanced Topics.
(1) I or II. The Staff

260B. Seminar in Nuclear Physics.
(1) I or II. The Staff

260C. Seminar in Molecular Physics.
(1) I or II. The Staff

260D. Seminar in Theoretical Physics.
(1) I or II. The Staff

298. Directed Studies. (2–4) I, II. The Staff
Prerequisite: consent of the instructor. May be repeated for credit up to 8 units.

299. Research. (1–4) I, II. The Staff
Research, either experimental or theoretical, may be undertaken by properly qualified graduate students under the direction of a staff member.

Education Abroad Courses

Goettingen Center

See section on Education Abroad Program for detailed course descriptions.

GC 113A(L)–113B(L). Advanced Physics Laboratory. (2–2)

GC 114A–114B. Theory of Electricity. (5–5)

GC 114A(S)–114B(S). Theory of Electricity (Seminar). (1–1)

GC 124A–124B. Introductory Nuclear Physics. (2–2)

GC 125A–125B. Neutron Physics. (2–2)

POLITICAL SCIENCE

William Ebenstein, Ph.D., LL.D., *Professor of Political Science.*
Russell H. Fitzgibbon, Ph.D., *Professor of Political Science.*
Stephen S. Goodspeed, Ph.D., *Professor of Political Science.*
Henry A. Turner, Ph.D., *Professor of Political Science (Chairman of the Department).*
Gordon E. Baker, Ph.D., *Associate Professor of Political Science.*
Edgar Lane, Ph.D., *Associate Professor of Political Science.*
**Peter H. Merkl, Ph.D., *Associate Professor of Political Science.*
Stanley Anderson, Ph.D., *Assistant Professor of Political Science.*
John E. Moore, Ph.D., *Assistant Professor of Political Science.*
Robert C. Noël, Ph.D., *Assistant Professor of Political Science.*
Robert G. Wesson, Ph.D., *Assistant Professor of Political Science.*

*C. Herman Pritchett, Ph.D., *Visiting Professor of Political Science.*
Ronald C. Nairn, Ph.D., *Acting Assistant Professor of Political Science.*

Preparation for the Major

The following courses are required in preparation for the Political Science major: Political Science 45 (3 units††); *and either* Political Science 20 *or* 100 (3 units†††); and History 4A–4B or 17A–17B (6 units).

The Major

Required: 24 units of upper division work in political science.† The work offered by the department falls into the following six fields (the courses in parentheses fall within the fields indicated):

1. Political Theory (101, 113, 187, 188, 189)
2. Public Law (117, 166, 167)
3. Politics (152, 153, 155, 162, 172)
4. Public Administration (162, 172, 181, 183)
5. International Relations (121, 124, 127, 128, 129, 133, 149)
6. Comparative Government, including area studies (128, 136, 137, 141, 142, 143, 148)

The student, in consultation with his major adviser, will select at least one course in each of four of the above six fields.

The Minor

Twenty units are required: Political Science 45, 20 or 100, and 14 upper division units selected from at least three of the political science fields.

Combination Social Sciences Major

Students interested in obtaining a major in the combined social sciences, see listing under "Social Sciences," page 183 of this bulletin.

THE MASTER OF ARTS DEGREE

The M.A. degree in political science is offered both under Plan I, the thesis plan, and Plan II, the comprehensive examination plan. The department normally operates under Plan I, but in exceptional cases the student, with the consent of the department chairman, may follow Plan II.

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* Spring 1965 only.
**Absent on leave, fall 1964.
† Political Science 100 and 110 do not normally count toward the 24-unit upper division requirement for the major. In certain cases, the major adviser may approve the inclusion of a maximum of two courses in other social sciences or history as part of the total 24 units.
†† Transfer students with no introductory work in modern political ideas are required to elect Political Science 110 (3 units).
††† Transfer students with less than a 3-unit course in American government are also required to complete Political Science 40 (2 units).

Plan I. Thesis Plan

1. Candidates must complete at least 24 units of course work *plus* a thesis.

2. At least 12 of the units of course work must be taken in strictly graduate courses in political science (*including* Political Science 203. Trends in Contemporary Political Science). A maximum of 4 of these units may be in 299 courses representing credit for research underlying the thesis. The remaining units making up the required total of 24 may be chosen from additional graduate courses or from undergraduate courses numbered 100 or above. With the approval of the student's adviser, a maximum of 6 of these remaining units may be included from graduate or upper division courses in a related discipline.

3. Candidates will be required to complete in graduate standing course work in three of the political science fields.

4. Before certifying a student for formal advancement to candidacy, the department reserves the right to satisfy itself as to the candidate's proficiency by means of special written examinations.

Plan II. Comprehensive Examination Plan

1. Candidates must complete at least 24 units of course work.

2. At least 12 of the units of course work must be taken in strictly graduate courses in political science (*including* Political Science 203, Theory and Method in Political Science). The remaining units making up the required total of 24 may be chosen from additional graduate courses or from undergraduate courses numbered 100 or above. With the approval of the student's adviser, a maximum of 6 of these remaining units may be included from graduate or upper division courses in a related discipline.

3. Candidates will be required to complete in graduate standing course work in four of the political science fields.

4. The candidate must pass a written examination in one field and an oral examination in two other fields of political science.

THE DOCTOR OF PHILOSOPHY DEGREE

Admission: Completion of the Master of Arts degree or its equivalent is the normal prerequisite for admission to the doctoral program. Admission is by approval of the officer in charge of graduate studies and by the departmental chairman. Only strong performance in previous undergraduate or graduate studies will be considered as justification for undertaking work toward the doctorate. The results of the Graduate Record Examination are often a helpful adjunct to decisions respecting admissions and awards. Whenever possible applicants should take the examinations and submit the results with their other credentials.

Specific Requirements for the Ph.D. Degree: The award of the degree of Doctor of Philosophy is not based merely on the fulfillment of technical requirements, but signifies that the Department of Political Science is satisfied that the candidate is professionally qualified as a political scientist, competent to carry on scholarly research and academic instruction in his fields of specialization, and to perform governmental service in a professional capacity. The following specific requirements should be taken in this context.

1. *Residence.* The University of California requires a minimum of two years' full-time residence in graduate study for the doctorate, at least one year of which must be spent in continuous residence at the University. One year of this residence is required after the student has been formally advanced to candidacy, i.e., upon the successful completion of the qualifying examinations. Normally, students will require two years of resident graduate study at this or other universities before taking the qualifying examinations.

2. *Languages.* Before taking the qualifying examinations, each student will be required to demonstrate his ability to read two foreign languages, one of which must be French or German. Choice of languages is subject to the approval of the Graduate Committee. The student should pass one language examination during the first year of his graduate work.

3. *Fields of Study.* The work offered in political science falls into six fields: Political Theory, Public Law, Politics, Public Administration, International Relations, and Comparative Government (including area studies). The student will be required to take or to have taken graduate or undergraduate course work in each of the six fields and to have special

competency in four, one of which will be designated his major field of specialization. In addition, the student will take work in a cognate field, normally one of the social sciences or history.

4. *Qualifying Examinations.* The aspirant must pass written examinations in 3 of the 6 fields of political science, and a comprehensive oral examination which will stress the candidate's major field. Written examinations must be completed before the student takes the oral examination.

5. *The Dissertation.* With the advice and approval of the doctoral committee, each student will select a dissertation topic in his major field of specialization. The dissertation must be based on original research and must make a significant contribution to knowledge in the field.

Teaching Credentials

Either a major or a minor in Political Science may serve as an appropriate part of the program of studies required for an elementary, secondary, or junior college teaching credential in California. A student wishing to secure any of these credentials should confer with designated counselors in the Department of Political Science and in the School of Education.

POLITICAL SCIENCE

Lower Division Courses

20. American Government and Politics. (3) I, II. The Staff

The constitutional principles and political institutions of the United States and the State of California.

For ways of satisfying the requirement in American History and Institutions, see page 42.

40. Contemporary Issues of Public Policy. (2) II. The Staff

Prerequisite: an introductory course in American government.

Analysis of selected major political conflicts and governmental programs in the United States.

45. Democracy and Totalitarianism. (3) I, II. Mr. Ebenstein, Mr. Merkl

The main political forces, institutions, and ideologies in the world today. Open to freshmen.

46. World Politics. (3) II. Mr. Noël, Mr. Wesson

Prerequisite: sophomore standing, or consent of instructor.

The nation-state system and the forces which operate in world politics.

Upper Division Courses

100. American National Government. (3) I, II. The Staff

Institutions of our national government and the political ideas on which these institutions have been established; the role of Congress, the President, the courts, administrative agencies, and regulatory legislation. Not open to students who have received credit for Political Science 20.

101. The Study of Politics. (3) I, II. Mr. Noël

Theories, techniques and problems of quantitative and other approaches to the data of politics; research design and application; the role of values.

110. Issues of Political Theory. (3) I, II. Mr. Merkl

Not open to students who have received credit for Political Science 45.

Introduction to some of the main concepts of political theory, such as the individual and the state, freedom and equality, political obligation, and their relevance to modern society and government. Liberalism, conservatism, socialism, communism and fascism, as alternative concepts.

113. American Political Thought. (3) I. Mr. Baker

The origin and development of significant political ideas in the United States, as expressed in the contributions of selected thinkers.

117. Law in the Modern State. (3) I, II. Mr. Anderson

An inquiry into the nature of law and justice.

121. International Relations. (3) I, II. Mr. Noël, Mr. Wesson

Not to be taken by students who have taken Political Science 46.

An examination of theories concerning the actions, interactions, and relationships among nation-states.

124. International Organization. (3) II. Mr. Goodspeed

The nature and function of international organization, stressing an evaluation of the experience of the League of Nations and the United Nations; regional organizations and specialized agencies.

127. American Foreign Policy. (3) II. Mr. Noël

The United States in world politics. Policy making institutions, particularly the presidency, Congress, state department, and the military establishment. Interaction between domestic and external politics.

128. Soviet Foreign Policy. (3) I. Mr. Wesson

The foreign policies of the Soviet Union considered in relation to such concepts as continuity and change, Messianism and real-politik, tactics and strategy, coexistence and expansion.

129. Foreign Policies of Western European Powers. (3) II. Mr. Goodspeed
Contemporary policies of Britain, France, Germany, Italy.

133. International Law. (3) II. Mr. Anderson
Nature and sources of international law; international legal personality; nationality; territory; jurisdiction; diplomatic and consular agents; treaties; war; neutrality.

136. Political Development of the Far East. (3) I, II. ———
The political concepts, governmental evolution, and international relations of China, Japan, Korea, and related areas.

137. Political Development of South Asia. (3) II. ———
The political concepts, governmental evolution, and international relations of India, Pakistan, Ceylon, and related areas.

141. Politics of Continental Europe. (3) I. Mr. Merkl
The constitutional development, governmental organization and politics of France and Western Germany.

142. Politics of Great Britain and the Commonwealth. (3) I, II. Mr. Merkl
The constitutional development, governmental organization and politics of the British Empire and Commonwealth.

143. Government and Politics in the Soviet Union. (3) I. Mr. Wesson
Ideological foundations. Structure and methods of the Communist Party.
The apparatus of government and its development.

146. Political Development of Modern Africa. (3) II. Mr. Goss
The political concepts, governmental evolution, and politics of African states.

148A–148B. Governments of Latin America. (3–3) Yr. Mr. Fitzgibbon
The constitutional development, governmental organization, and political practices of the Latin American states.

149. Latin America in World Affairs. (3) II. Mr. Fitzgibbon
Relations of Latin America with the United States and other world powers; Pan-Americanism and its relation to world organization.

152. Political Parties and Politics. (3) I. Mr. Turner
The nature, characteristics, and history of American political parties; party organization; political campaigns and finance; nominations, elections, and electoral problems.

153. Pressure Groups and Propaganda. (3) II. Mr. Turner
The nature and function of organized interest groups and their impact upon public opinion and government; the manipulation of public opinion and the relationship of propaganda to other forms of political power.

155. American Legislatures. (3) II. Mr. Lane
The organization, operation, and politics of Congress and the state legislatures; problems of representation, leadership, and relations with interest groups.

162. Metropolitan Government and Politics. (3) II. Mr. Lane
Problems of politics and administration in urban and metropolitan areas.

166. American Constitutional Law: Distribution of Power. (3) I. Mr. Anderson
The role of the Supreme Court as arbiter of federalism and separation of powers; interplay of political, social, and economic forces.

167. American Constitutional Law: Civil Liberties. (3) II. Mr. Anderson, Mr. Pritchett
The role of the Supreme Court as interpreter of constitutional freedom of expression and conscience; procedural guarantees and equal protection of the laws.

172. State and Local Government. (3) II. Mr. Baker
Basic problems and recent developments, with emphasis on state political forces, institutions, and processes. Intergovernmental relations.

181. Public Administration. (3) I. Mr. Moore
The role of administration in the modern state, including problems of organization, interlevel relationships, fiscal organization and control, personnel administration, and administrative regulation.

183. Problems in Public Administration. (3) II. Mr. Moore
The identification and analysis of selected problems in public administration: organization, personnel, management, budgeting, and public relations.

187. Asian Ideologies. (3) II. ———
The political, social, and religious concepts of the Far East (Confucianism, Taoism, Shinto) and South Asia (Hinduism, Buddhism, Jainism). Their effects upon individual citizens and national institutions.

188. Political Theory: Ancient and Medieval. (3) I. Mr. Merkl
The development of political theory from Plato and Aristotle to the sixteenth century.

189. Modern Political Theory. (3) II. Mr. Ebenstein
Development of political ideas from the sixteenth century to the present, with emphasis on the nineteenth and twentieth centuries.

196. Senior Seminar in Political Science. (3) I, II. The Staff

199. Independent Studies in Political Science. (1–4) I, II. The Staff
Admission by special permission only. For majors.

Graduate Courses

203. Trends in Contemporary Political Science. (4) I. Mr. Noël
Required of all candidates for advanced degrees in political science.

204. Research Methods in Political Science. (4) II. Mr. Noël

250. Seminar in International Relations. (4) II. Mr. Goodspeed

255. Seminar in American Political Ideas and Institutions. (4) I. Mr. Baker

256. Seminar in Comparative Government. (4) I, II. Mr. Merkl
Prerequisite: undergraduate work in comparative government or area studies, or permission of the instructor.

257. Seminar in Public Law. (4) II. Mr. Anderson, Mr. Pritchett
Prerequisite: undergraduate work in Public Law, or permission of instructor.

258. Seminar in Public Administration. (4) I. Mr. Lane
Prerequisite: undergraduate work in Public Administration, or permission of the instructor.

259. Seminar in American Politics. (4) I. Mr. Turner

265. Seminar in Political Theory: Ancient and Medieval. (4) I. Mr. Ebenstein

266. Seminar in Political Theory: Modern. (4) II. Mr. Ebenstein

270. Seminar in Latin American Governments. (4) II. Mr. Fitzgibbon

287. South Asian Studies. (4) II. Mr. Nairn

298. Special Studies. (1–4) I, II. The Staff

299. Directed Research. (2–4) I, II. The Staff
Prerequisite: graduate standing and consent of the instructor.

Related Courses in Another Department

Education SS 190. Teaching Procedures in Social Studies. (2) I, II. Mr. Nelson

Education SS 192A–B–C. Student Teaching: Social Studies. (2–2–2) I, II. Mr. Davidson, Mr. Nelson

Education Abroad Courses

Bordeaux Center

See section on Education Abroad Program for detailed course descriptions.

BC 121A–121B. International Relations. (4–4)

BC 125A–125B. Contemporary World Political and Economic Problems. (4–4)

BC 142A–142B. Government and Politics in France. (4–4)

Goettingen Center

See section on Education Abroad Program for detailed course descriptions.

GC 134A–134B. Contemporary World Politics. (4–3)

GC 140A–140B. The Theory of Politics. (7–5)

Padua Center

See section on Education Abroad Program for detailed course descriptions.

PC 125A–125B. History of Treaties and International Policy. (5–5)

PSYCHOLOGY

William D. Altus, Ph.D., *Professor of Psychology.*
John W. Cotton, Ph.D., *Professor of Psychology.*
Robert M. Gottsdanker, Ph.D., *Professor of Psychology (Chairman of the Department).*
Howard H. Kendler, Ph.D., *Professor of Psychology.*
William B. Michael, Ph.D., *Professor of Education and Psychology.*
Alma B. MacGregor, Ph.D., *Professor of Psychology, Emeritus.*
Charles G. McClintock, Ph.D., *Associate Professor of Psychology.*
Loy S. Braley, Ph.D., *Assistant Professor of Psychology.*
John M. Foley, Ph.D., *Assistant Professor of Psychology.*
Alice M. Hawkins, Ph.D., *Assistant Professor of Psychology.*
Robert W. Reynolds, Ph.D., *Assistant Professor of Psychology.*

Jerry W. Higgins, Ph.D., *Acting Professor of Psychology.*
David M. Messick, Ph.D., *Acting Assistant Professor of Psychology.*
*Clifford T. Morgan, Ph.D., *Lecturer in Psychology.*

Preparation for the Major

Three lower division departmental courses are required: Psychology 5, 11, 12. These three courses must be passed with an average grade of C or higher. If the student has already passed a one semester course in general psychology before becoming a major in this department, he will be considered to have passed the Psychology 12 requirement and will be eligible to enter Psychology 11. Ordinarily, Biology 1 or 20 will be taken in the first semester of the freshman year and Psychology 11 in the second semester.

The following courses in other departments are required: (a) Biology 1 or 20, (b) Chemistry 20–20L or 40–40L, or Physics 20–21 or 101–21, (c) two additional courses or course-laboratory combinations, such as Chemistry 20–20L, from one or more of the following: Biological Sciences, Chemistry, Mathematics, or Physics.

Allowable substitutions are: Physics 2A–2B (4–4) for Physics 20, 21 (recommended for students with special interest in psychophysics).

The second year of high school algebra must be completed before Psychology 5.

Requirements for the Major

Psychology 106 is the only upper division course that is specifically required. An additional 18 units in upper division psychology courses must be taken to complete the major. There must be included at least three courses in which controlled observation or the analysis of the actual results of such observations comprise the principal activity. These courses are shown in the following groups.

Group I. 108C, 130C, 131C
Group II. 142, 162, 163A, 163B, 164, 178

Further, at least one course must be taken in each group.

A Psychology major is available to those also completing a Speech major and working toward state certification in Speech and Hearing. One substitution is allowable, Speech 175 or 177A in place of the Group I requirement. Twenty-four upper division units in psychology courses are required.

Requirements for the Minor

Psychology 11, Psychology 12, Psychology 5, and 11 units of upper division courses in psychology will satisfy the requirements for a minor.

* Absent on leave, 1964–65.

THE DOCTORAL PROGRAM IN PSYCHOLOGY

The Miller Analogies Examination and the Graduate Record Examination in Psychology must be completed before an application for admission to graduate study is acted upon. Interested students should contact the Chairman of the Department of Psychology for further information about admission requirements and the doctoral program.

No students will be admitted to work for the Master of Arts degree only; obtaining the Master of Arts degree en route to the Ph.D. degree in psychology is permitted but not required.

Teaching Credentials

Either a major or a minor in Psychology may serve as an appropriate part of the program of studies required for an elementary, secondary, or junior college teaching credential in California. A student wishing to secure any of these credentials should confer with designated counselors in the Department of Psychology and in the School of Education.

PSYCHOLOGY

Lower Division Courses

1. Concepts of Psychology. (3) I, II. The Staff

Lecture, three hours. Not open to juniors or seniors without permission of the instructor. (See Psychology 101.) Not open to majors in psychology.

A general education course in psychology. An examination of the subject matter and methods of psychology, with emphasis on those concepts which relate most directly to an understanding of human behavior.

5. Introduction to Psychological Measurements. (3) I, II. Mr. Foley, Mr. Reynolds

Lecture, two hours; laboratory, two hours. Prerequisite: second-year high school algebra.

Measures of central tendency and of dispersion, correlation, the significance of differences. The interpretation of statistical data in psychological research.

11. General Psychology. (3) I, II. The Staff

Lecture, two hours; demonstration and discussion, two hours. Prerequisite: Biology 20 or its equivalent, or Psychology 1.

Sensory processes, perception, learning, drives, central physiological mechanisms.

12. General Psychology. (3) I, II. The Staff

Lecture, two hours; demonstration and discussion, two hours. Prerequisite: Psychology 11. Not open for credit to students who have had Psychology 1 or 101.

Personality, motivation, aptitudes, social behavior.

33. Personal and Social Adjustment. (3) I or II. Mr. Altus, Mr. Higgins

Prerequisite: Psychology 1 or 11.

Orientation in the practical use of psychological principles in problems and circumstances encountered in the university and in later life.

Psychology 1 or its equivalent is required for admission to all upper division psychology courses for non-psychology majors. Certain courses have additional prerequisites as noted.

Upper Division Courses

101. Principles of Psychology. (3) I or II. The Staff

Prerequisite: open to upper division students who do not have credit for Psychology 1, 11, or 12.

May be offered in substitution for Psychology 1 as a general education course and as the prerequisite for certain upper division courses.

A critical discussion of the major problems and points of view in psychology. Topics include motivation, perception, personality, and learning.

104. Principles of Test Construction. (3) I or II. Mr. Michael

Lecture, three hours. Prerequisite: Psychology 5, or consent of the instructor.

Consideration both of the theoretical foundations of psychological measurement, including problems of reliability, validity, norms, and prediction, and of the techniques by which aptitude, achievement, and personality tests are constructed and evaluated.

106. Experimental Psychology. (3) I, II. Mr. Foley, Mr. Gottsdanker

Lecture, two hours; laboratory, three hours. Prerequisite: Psychology 5.

Analysis and application of manipulative and differential methods of psychological experimentation.

107. Quantitative Methods in Psychology. (3) I or II. Mr. Cotton, Mr. Messick

Lecture, three hours. Prerequisite: Psychology 5 or an equivalent course in statistics.

Application of statistical methods to the design and analysis of psychological investigations and to the interpretation of the quantitative data of psychology.

108. Physiological Psychology. (3) I or II. Mr. Reynolds

Lecture, three hours. Prerequisite: Biology 1; Chemistry 40, 40L, or consent of the instructor.

The physiological mechanisms in behavior.

108C. Physiological Psychology Laboratory. (1) I or II. Mr. Reynolds

Laboratory, three hours. Prerequisite: Psychology 108 (previous or concurrent).

Laboratory experiments in physiological psychology.

112. Child Psychology. (3) I or II. Mrs. Hawkins

Normal behavior and development of the infant and child: motor, mental, emotional, and social growth.

***113. Psychology of Adolescence.** (3) I or II. ———

The emotional, social, and intellectual growth of the adolescent, with special consideration of changing attitudes as the individual attains sexual maturation and adult physique.

120. History and Systems of Psychology. (3) I or II. Mr. Kendler

Prerequisite: Psychology 1 or 12, 11 and at least 6 units of upper division psychology; or consent of instructor.

Major stages in the emergence of various systems in psychology. Nineteenth century structuralism, functionalism, behaviorism, Gestalt psychology and psychoanalysis.

126. Contemporary Psychology. (3) I or II. Mr. McClintock

Prerequisite: 6 upper division units in psychology. Primarily for senior majors in psychology.

130. Psychology of Learning. (3) I or II. Mr. Cotton, Mrs. Hawkins

Experimental and theoretical approaches to learning and motivation. The positions of Guthrie, Hebb, Hull, Skinner, Tolman, and others.

130C. Psychology of Learning Laboratory. (1) I or II. The Staff

Laboratory, three hours. Prerequisite: Psychology 5, 11, and 130 (previous or concurrent).

Experimentation, analysis of data, and preparation of laboratory reports on topics in the psychology of learning.

131. Perception. (3) I or II. Mr. Gottsdanker

Lecture, three hours. Prerequisite: Psychology 11, Biology 20, Physics 20.

Direct utilization by the organism of the data provided by the different sensory modalities. Characteristics of the major modalities, interrelations among them, and general principles of perception.

131C. Perception Laboratory. (1) I or II. Mr. Gottsdanker

Laboratory, three hours. Prerequisite: Psychology 5, Psychology 131 (previous or concurrent).

Laboratory experiments in human perception.

***134. Motivation and Emotion.** (3) I or II. Mr. Morgan

Lecture, three hours. Prerequisite: Psychology 1, 11, or 12.

A basic study of the phenomena and problems of motivation and emotion in man and animals.

142. Experimental Social Psychology. (3) I or II. Mr. McClintock

Lecture, two hours; laboratory, four hours. Prerequisite: Psychology 145, or Sociology 153 or 161, or consent of instructor.

Methods, techniques, and typical experimental research in social psychology. Emphasis on the effects of small groups upon individual behavior.

145. Social Psychology. (3) I or II. Mr. McClintock

Theories of social psychological behavior with emphasis on contemporary concepts employed in the explanation of such behavior, for example, attitudes, roles, and interactions.

***146. Differential Psychology.** (3) I or II. The Staff

The study of data bearing on individual differences and of theories relating to their etiology.

148. Psychology of Personality. (3) I. ———

Cultural and biological determinants of personality development.

149. Biographical Psychology. (3) I or II. Mr. Altus

The consideration of certain significant biographies in relation to such factors as motivation, defense mechanisms, and physical and social environment.

***160. Mental Deficiency.** (3) I. ———

Mental defect and related abnormalities, primarily in the child; degrees of impairment, putative etiology; social, educational, and vocational problems deriving from such deviations.

162. Introduction to Clinical Psychology. (3) I. Mr. Altus, Mr. Higgins

Lecture, two hours; field work, three hours.

An introduction to contemporary theory, research and practice in clinical psychology. Students will elect either: A. Laboratory in individual testing at the lower age levels, or B. Laboratory in personality and clinical research.

163A. Clinical Measurements Techniques. (3) II. Mr. Altus, Mr. Higgins

Lecture, two hours; field work, three hours. Prerequisite: Psychology 162 or consent of the instructor.

The techniques of individual intelligence testing, with special emphasis upon the adolescent and the adult.

***163B. Clinical Measurements Techniques.** (3) I. Mr. Altus, Mr. Higgins

Lecture, two hours; field work, three hours. Prerequisite: Psychology 163A.

Theoretical considerations of projective tests in measuring the personality structure; an introduction to techniques of administering and scoring a projective test.

***164. Clinical Psychology.** (3) II. Mr. Altus, Mr. Higgins

Lecture, two hours; field work, three hours. Prerequisite: Psychology 163B.

An integration of the techniques of measuring adjustment and intelligence in their application to the individual case.

* Not to be given, 1964–65.

168. Abnormal Psychology. (3) I or II. Mr. Altus, Mr. Higgins
A study of those who deviate in terms of psychoneurosis, psychosis, and allied disorders. Symptoms entering into each of the syndromes; theories of causation of various types of mental disorder.

178. Psychology of Exceptional Children. (3) I or II. Mrs. Hawkins
Children with physical and emotional handicaps, and those of superior endowment.

199. Independent Studies in Psychology. (1–4) I, II. The Staff
Prerequisite: advanced status (usually senior level), B average in previous college work.
Study or research under guidance of a member of the department. Students wishing to enroll should prepare a short plan of study for their course work.

Graduate Courses

Full graduate status in psychology or permission of the instructor is prerequisite to all graduate offerings.

203A–203B. Data Analysis in Psychology. (3–3) Yr. (Beginning in Spring) Mr. Foley
Prerequisite: Psychology 5.
During the first semester special reference to t-tests, analysis of variance and co-variance, chi-square, and nonparametric statistics will be given. Thereafter, estimation of parameters in rational and empirical equations, particularly from psychophysics and statistical learning theory will be emphasized.

206A–206B. Experimental Methods. (3–3) Yr. Mr. Gottsdanker, Mr. Kendler, Mr. Reynolds
Training in the design and execution of psychological research. Aspects of general scientific method and theory construction will also be discussed.

207. Mathematical Learning Theory. (2) I. Mr. Cotton
Prerequisite: Mathematics 32 or equivalent. Mathematics 120 is also recommended.
An introduction to mathematical theories of learned behavior, with principal attention given to work by Hull, Bush, Mosteller, Estes, Burke, and Restle.

208. Physiological Correlates of Behavior. (2) I. Mr. Morgan, Mr. Reynolds
The physiological substratum of behavior and the neural and endocrine mechanisms which underlie psychological phenomena and behavior.

218. Sensory Processes. (2) I. Mr. Foley
Major research findings in sensory psychology, with primary emphasis upon visual and auditory phenomena.

222. Personality Dynamics. (2) I or II.
Dynamics of human behavior, as viewed by Freud, Jung, and more recent theorists.

230. Learning. (2) I. Mr. Cotton, Mr. Kendler
Study of experimentation on the fundamental processes: reinforcement, extinction, generalization, and discrimination.

231. Perception. (2) II. Mr. Gottsdanker
The direct utilization of sensory information in judging, identifying, describing, moving, and manipulating.

242. Experimental Social Psychology. (2) I. Mr. McClintock
Examination of major theoretical and experimental problems and research findings in social psychology.

249. Abnormal Psychology. (2) I. Mr. Altus
A consideration of advanced topics in abnormal psychology.

251. Seminar: Contemporary Research. (1) Yr. Mr. Cotton, Mr. Gottsdanker
Lecturers from off the campus will often be invited to discuss their current work.

***270A–270B. Advanced Seminar in History and Systems.** (2–2) Yr. Mr. McClintock, Mr. Reynolds
Prerequisite: two semesters as a psychology graduate student beyond the first year graduate program.
A survey of historical movements in psychology.

290. Seminar. (2) I, II. The Staff
Study in one of the following areas: (a) Learning, (b) Perception, (c) Physiological Psychology. Any section may be repeated for credit.

295. Reading in Psychology. (1–3) I, II. The Staff
Individual reading by the student under the guidance of a faculty member.

299. Research in Psychology. (1–6) I, II. The Staff
Empirical and theoretical investigation of special problems in psychology. Required each semester of all graduate students.

* Not to be given, 1964–65.

RELIGIOUS STUDIES

D. Mackenzie Brown, Ph.D., *Professor of South Asian Studies (Chairman of the Department).*
William R. Comstock, Ph.D., *Assistant Professor of Religious Studies.*

Paul J. Tillich, Ph.D., *Visiting Professor of Religious Studies.*
Walter H. Capps, Ph.D., *Lecturer in Religious Studies.*

The major in Religious Studies is designed for students desiring a general education with emphasis upon this aspect of Western civilization and comparative cultures.

Preparation for the Major

History 4A–4B; Philosophy 20A–20B; Religious Studies 30, 40.

The Major

Twenty-four units of upper division Religous Studies courses, including Religious Studies 155. Six of the 24 units may be selected from Anthropology 124, Philosophy 112, or other related courses. Religious Studies may be elected as a minor.

RELIGIOUS STUDIES

Lower Division Courses

30. Introduction to Religion. (3) I, II.
Mr. Capps, Mr. Comstock
An analytical survey of the historical development and cultural role of religious traditions and institutions.

40. Religion and Society. (3) I, II. Mr. Capps
The relationship of religious concepts and values to contemporary problems of individual behavior, political responsibility, and international order.

45. Religion and Existentialism. (3) I.
Mr. Comstock
A survey of important existential concepts and their relation to contemporary religious and theological thought.

Upper Division Courses

101A–101B. The Western Religious Heritage. (3–3) I, II. Mr. Capps
The Judaic, Greek, and Christian ideas and institutions which constitute the religious traditions of Western civilization.

102. American Religious Traditions. (3) I.
Mr. Capps
The historical role and contemporary influence of religious organizations and movements in the United States.

103. Contemporary Trends in Religious Thought. (3) II. Mr. Comstock
A survey of the growth and development of twentieth century religious thought and its historical background.

105. Religious Myth and Language. (3) II.
Mr. Comstock
A survey of contemporary studies into the nature and function of religious symbol and language.

110. Biblical Judaism and Christianity. (3) I.
Mr. Capps
A critical analysis of Judaic and Christian Scriptures, with consideration of the Hellenistic contribution.

155. Asian Religions. (3) II. Mr. Brown
The origins, development, and doctrines of the major religions of the Far East and South Asia.

160. Indian Religious Systems. (3) II.
Mr. Brown

165. Buddhism. (3) I. Mr. Brown
Prerequisite: consent of the instructor.

170. Religion and the Humanities. (3) I.
Mr. Comstock
An examination of the vital relationship existing between religion and the humanistic disciplines, with special emphasis on the religious dimensions of great literary works.

181. The Theology of Paul Tillich. (3) II.
Mr. Tillich

194A–194B. Group Studies in Religious Thought. (1–4) I, II. The Staff

RUSSIAN AREA STUDIES

Committee in Charge
Edward Chmielewski, Ph.D., *Assistant Professor of History.*
Jerzy F. Karcz, Ph.D., *Associate Professor of Economics (Chairman of the Committee).*
Stanley D. Krebs, Ph.D., *Assistant Professor of Music.*
Edmond E. Masson, Ph.D., *Associate Professor of French and Russian.*
Jan Perkowski, A.M., *Acting Assistant Professor of Russian.*
Robert G. Wesson, Ph.D., *Assistant Professor of Political Science.*

The major in Russian Area Studies is an interdepartmental major which can be taken by a student only in conjunction with another departmental major. The major aims at the provision of a broad interdisciplinary background, designed to enrich the student's professional training provided by a department. It is intended to serve the needs of the students who wish to pursue further graduate study or those who desire to obtain a general education with a greater emphasis on an important world area.

Preparation for the Major

Twenty-five units required in lower division: Russian 1, 2, 3, 4 (or equivalent), History 4A–4B, Political Science 45.

The Major

Twenty-seven units required in upper division courses including: Economics 117, History 150A–150B, Interdepartmental Senior Seminar, Music 113, Political Science 128 *or* 143, and Russian 115A–115B. Select at least 6 units from the following electives: Anthropology 125, 130, Economics 107, History 195F, Political Science 128 *or* 143 and Russian 198.

The language requirement may be waived upon demonstration of competence at the required level.

The program of courses is to be made out by each student in cooperation with one of the members of the Committee.

SOCIAL SCIENCES

Majors in the following fields of the social sciences are available: anthropology, economics, history, political science, and sociology. There is also an offering in geography. Students with interests in the individual fields are advised to study the separate descriptions in this bulletin and to consult the chairman of the appropriate department.

Anthropology, Departmental Office, NH 1051
Economics, Departmental Office, NH 2051
Geography
History, Departmental Office, NH 3041
Political Science, Departmental Office, NH 3051
Sociology, Departmental Office, NH 2041

Combination Social Sciences Major

A student who wishes to major in Combination Social Sciences *must* indicate a field of emphasis (anthropology, economics, geography, history, philosophy, political science, or sociology). An adviser will be assigned to each student by the department of emphasis.

The Combination Social Sciences major is not recommended for students who expect to work for a master's degree or for a doctorate.

Preparation for the Major

Three one-year sequences from the following list, including History 4A–4B, which is required. Thus, a total of 18 units in lower division is required in preparation for the major. The courses taken here in preparation for the Combination Social Sciences major may also, in certain cases, be used in fulfillment of the general education program, as listed in this bulletin.

Anthropology 2 and 5. Economics 1A–1B. History 4A–4B. Philosophy 6A–6B or 20A–20B. Political Science 20 and 45. Sociology 1 and 7 or 30.

The Major

Required: 27 units of upper division work, including 15 units in the subject field of greatest emphasis, and 6 units in each of two other subject fields in the social sciences, as listed above. While philosophy is not classed as a social science, it does qualify as one of the areas of emphasis in the Combination Social Sciences major.

Teaching Credentials

Any of the majors in subject fields in the social sciences may serve as the basis for an interdepartmental social sciences major for the purpose of obtaining an elementary or secondary teaching credential. The teaching major must contain a minimum of 27 upper division units (at least 15 units in the field of greatest emphasis) selected from anthropology, economics, social geography, history, political science, and sociology. It must include at least one course in United States history and at least one course in each of three of the other fields mentioned.

A minor for a standard teaching credential must be in a single subject field, as required by the State Board of Education under authority of State law (Senate Bill #57—the Fisher Bill). Therefore, Combination Social Sciences can no longer be offered as a minor for teaching credentials.

For further credential information the student should confer with designated counselors in the area of his greatest emphasis in the social sciences and in the School of Education.

SOCIOLOGY

Donald R. Cressey, Ph.D., *Professor of Sociology.*
David Gold, Ph.D., *Professor of Sociology (Chairman of the Department).*
Charles B. Spaulding, Ph.D., *Professor of Sociology.*
*Thomas J. Scheff, Ph.D., *Associate Professor of Sociology.*
Tamotsu Shibutani, Ph.D., *Associate Professor of Sociology.*
Robert H. Billigmeier, Ph.D., *Assistant Professor of Sociology.*
Walter F. Buckley, Ph.D., *Assistant Professor of Sociology.*
Peter M. Hall, Ph.D., *Assistant Professor of Sociology.*
Charles H. Hubbell, Ph.D., *Assistant Professor of Sociology.*

Ingeborg B. Powell, M.A., *Acting Assistant Professor of Sociology.*

The sociology major is designed to provide (1) preprofessional training for students who intend to do graduate work in sociology, (2) preparation for those planning careers in education or social work, and (3) a broad background in the social sciences for those interested in a liberal education. The courses to be taken will vary with the particular interests of each student.

Preparation for the Major

Required Courses (15 units): (1) Sociology 1 or 101, and Sociology 30 (2) Anthropology 2 or 101 (3) One of the following sequences: (a) Economics 1A–1B (b) History 4A–4B (c) Political Science 20 and 45 (d) Psychology 11 and 12.

The Major

Required: 24 units of upper division Sociology courses, including Sociology 106. In certain cases the major adviser may approve a maximum of six units of upper division work in closely allied fields as part of the required total of 24 units.

Recommended: Students intending to engage in graduate study in Sociology are urged to take Mathematics 30 and 32, Philosophy 20A–20B, Sociology 107, 186, and 187.

The Minor

A minor consists of at least 20 units in Sociology, including Sociology 1 and 30 and at least 12 units in upper division courses.

THE MASTER OF ARTS DEGREE

In addition to the general campus requirements as listed on pages 57 to 59 of this catalogue, the candidates for the degree of Master of Arts in Sociology must fulfill the following requirements:

1. A Bachelor's degree in Sociology (or equivalent training) from a recognized institution is required. Candidates will be required to make up any deficiencies in their undergraduate training, in addition to the regular course work for the Master's degree.

2. Before being certified for formal advancement to candidacy all candidates must demontrate proficiency in sociological theory and method in a qualifying examination.

3. Plan I: Thesis Plan

(a) Completion of a minimum of 20 units of work, of which 8 must be in graduate courses or seminars in the 200 series. Although this work is normally done in the Sociology Department, other courses may be substituted with the consent of the Graduate Adviser.

(b) Completion of a thesis.

4. Plan II: Comprehensive Examination Plan

(a) Completion of a minimum of 24 units of work, of which 12 must be graduate courses or seminars in the 200 series.

* Absent on leave, fall 1964.

(b) The passing of a written examination on one of the major sub-fields of Sociology (human communities, social groups, social psychology, or social change).

Teaching Credentials

Either a major or a minor in Sociology may serve as an appropriate part of the program of studies required for an elementary, secondary, or junior college teaching credential in California. A student wishing to secure any of these credentials should confer with designated counselors in the Department of Sociology and in the School of Education.

SOCIOLOGY

Lower Division Courses

1. Introductory Sociology. (3) I, II. The Staff
The nature of human society and of its scientific study, cultural variation, social evolution, personality development, collective behavior, social institutions, ecology, and population.

7. Social Disorganization. (3) I, II. The Staff
Prerequisite: Sociology 1 or consent of the instructor.
Social "organization" and "disorganization." Behavior symptomatic of societal disorganization such as family disorganization, crime and delinquency, suicide, alcoholism, and intra-societal conflict.

30. Society and Personal Growth. (3) I, II.
Prerequisite: Sociology 1. The Staff
The introduction of the individual into group life: the organization and perspectives of personality; the social control of conduct.

Upper Division Courses

Prerequisite to upper division courses: Sociology 1, or Sociology 101, or consent of the instructor.

101. General Sociology. (3) I, II. The Staff
The major concepts, principles, and problems of sociology. Not open to those who have had Sociology 1. May serve as prerequisite for upper division courses.

106. Introduction to Social Research. (3) I, II. ———
Research skills and the roles of theory, design, data collection, and analysis introduced through library and field studies conducted by class members. Emphasis on research techniques.

107. Intermediate Quantitative Methods. (3) II. ———
Prerequisite: Sociology 106.
Logic and utilization of quantitative measures and procedures especially relevant to sociological analysis.

120. Marriage and the Family. (3) I, II. Mr. Spaulding
The human family, past and present; adjustment in the contemporary American family.

124. Collective Behavior. (3) I. Mr. Shibutani
The spontaneous formation of groups in crisis situations, with emphasis on crowd phenomena and on conflict.

130. Social Change. (3) I, II. ———
Theories of social change and of the evolution of social systems.

131. Urban Society. (3) II. ———
The social systems of modern urban society.

135. Principles of Social Welfare. (3) II. ———
Basic concepts and methods of social work; the application of case work techniques; structure and function of public welfare agencies; social group work and community organization.

142. Social Stratification. (3) II. Mr. Buckley
The nature of social classes and class relations, emphasizing contemporary studies of American society.

153. Political Sociology. (3) I, II. Mr. Buckley, Mr. Gold
Prerequisite: Sociology 1, Psychology 11, or consent of instructor.
Social and cultural bases of the political process: public attitude and opinion formation, social power and policy-making, and the role of the mass media.

155. Communication and Consensus. (3) II. Mr. Shibutani
The symbolic organization of experience; social control of communication; the formation of consensus under varying conditions.

160. Industrial Sociology. (3) I. Mr. Spaulding
The position of workers in American society, factors correlated with occupation, access to the job, formal and informal groups and organizations affecting workers.

161. Small Groups. (3) I. Mr. Hubbell
The structure and dynamics of small groups, including the analysis of roles, interpersonal relations, and group characteristics; intergroup relations; field and laboratory research on small groups.

162. Social Movements. (3) I. Mr. Billigmeier
Developmental processes of movements seeking alterations in the social order; a comparative analysis of utopias, classical and contemporary liberalism, socialism, and communism.

170. Sociology of the Arts. (3) I. ———
The relationships of artists, art traditions, and art forms to variant social structures and institutions.

182. Sociology of Crime and Delinquency. (3) I. Mr. Cressey
Theories of the genesis of delinquency and crime; factors in the organization of delinquent and criminal behavior from the points of view of the person and group; delinquent and criminal behavior systems.

183. Control of Crime. (3) II. Mr. Cressey
Theories of punishment and treatment used in dealing with convicts and juvenile delinquents; analysis of the organizational conditions affecting the behavior of police, judges, prison, probation, and parole workers.

185. Population. (3) I. Mr. Billigmeier
Population composition and change; differential fertility and mortality of sociocultural groups; internal and international migration; population theory and national policies; problems in areas of population pressure.

186. Development of Sociological Theory. (3) I. Mr. Buckley
The history of sociological thought, with particular reference to the classic works of the outstanding American and European figures in sociology through the 1920's.

187. Contemporary Sociological Theory. (3) II. Mr. Buckley
A study of the major theoretical issues in current sociology. Material will be drawn from the major recent authorities. (A continuation of Sociology 186, but may be taken separately.)

189. Inter-Ethnic Contacts. (3) II. Mr. Billigmeier
Consequences of racial and ethnic contacts, with particular emphasis upon minorities in the United States.

193. Current Issues in Social Psychology. (3) I, II. ———
Prerequisite: Sociology 30 and 106, or their equivalents.
An advanced course dealing with topics selected by the lecturer. Emphasis is on areas of research in social psychology, such as the decision-making process, role analysis, and other current topics.

198. Readings in Sociology. (1–3) I, II. The Staff
This course may be taken for no more than two semesters and for a maximum of three units each semester.

199. Independent Studies in Sociology. (1–4) I, II. The Staff

Graduate Courses

206. Theory and Method in Sociology. (2) I. Mr. Buckley
Prerequisite: Sociology 106 and 107 or consent of instructor.

208A–208B. Advanced Statistics. (2–2) I, II. Mr. Gold
Prerequisite: Sociology 106 and 107, or equivalent.

230. Social Organization. (2) II. Mr. Spaulding

240. Social Control. (2) II. Mr. Shibutani

252. Deviant Behavior. (2) I. Mr. Cressey

294. Group Studies in Social Institutions. (2) I, II. The Staff
May be repeated for credit.

298. Special Studies. (1–4) I, II. The Staff
May be repeated for credit.

299. Directed Research. (1–4) I, II. The Staff
May be repeated for credit.

Education Abroad Courses

Bordeaux Center

See section on Education Abroad Program for detailed course descriptions.

BC 163A–163B. Social Movements. (4–4)

Goettingen Center

See section on Education Abroad Program for detailed course descriptions.

GC 188A–188B. Analysis of Contemporary Society. (7–5)

SPANISH AND PORTUGUESE

Eda Ramelli, Doctora en Letras, *Professor of Spanish, Emeritus.*
Samuel A. Wofsy, Ph.D., *Professor of Spanish, Emeritus.*
Pablo Avila, Ph.D., *Associate Professor of Spanish.*
*David Bary, Ph.D., *Associate Professor of Spanish.*
Winston A. Reynolds, Ph.D., *Associate Professor of Spanish (Chairman of the Department).*
Brenton K. Campbell, Ph.D., *Assistant Professor of Spanish.*
Donald L. McGrady, Ph.D., *Assistant Professor of Spanish.*
John F. Tull, Jr., Ph.D., *Assistant Professor of Spanish.*

Magda Arce, Litt.D., *Visiting Assistant Professor of Spanish.*
Mireya Jaimes-Freyre, M.A., *Acting Assistant Professor of Spanish.*
Enrique Martinez-Lopez, M.A., *Acting Assistant Professor of Spanish.*
Andres R. Ramón, LL.M., *Lecturer in Spanish.*
Robert E. Wilson, M.A., *Lecturer in Spanish.*
Luis B. Durán, M.A., *Associate in Spanish.*
Hildrud Mathias, M.A., *Associate in Spanish.*
Michio Oka, M.A., *Associate in Spanish.*

The Major in Spanish

Preparation for the Major (i.e., lower division): Spanish 4 (may be omitted if Spanish 3 passed with grade A), 25A–25B, 30A–30B**, History 8A–8B, which also fulfills the State requirement in American History and Institutions.

Students who wish to make Spanish their major subject must have maintained an average grade of at least C in the Spanish courses taken prior to their junior year. Students transferring from other institutions may be tested by examination.

Those planning to pursue work toward the Master of Arts degree should have a minimum of one year of college Latin or its equivalent.

Students whose native language is Spanish will not be permitted to enroll in any Spanish course lower than 25A.

All upper division courses are given in Spanish. Spanish 25B or equivalent is prerequisite to all upper division courses.

The Major—Required: 27 upper division units.*** Of these, course 109A–109B (Spanish Literature from the Beginnings to the end of the Golden Age) must be taken. The remaining 21 units may be chosen from the other upper division offerings of the Department which include: Spanish 103, 105A–105B, 107A–107B, 110A–110B, 111A–111B, 116, 118, 125A–125B, and 127A–127B.

The Minor—A minimum of 20 units in Spanish required, of which 9 units must be upper division.

THE MASTER OF ARTS DEGREE

The Department follows Plan II, with no thesis requirement. An M.A. candidate must complete a minimum of 24 units of upper division and graduate courses, of which at least 12 units must be in the graduate series. A minimum of one year of college Latin (or its equivalent), if not previously completed, must also be taken.

The comprehensive examination, generally administered by the Department during the last two weeks of classes in any semester, consists of two 2-hour written examinations and a 2-hour oral examination.

* Absent on leave, 1964–65.
** Those who have already taken 25B or 101A are to complete 101B as specified under program listed in 1963–64 catalogue.
*** Students who have already finished at least one semester in upper division may elect to follow program listed in 1963–64 catalogue.

Teaching Credentials

Either a major or a minor in Spanish may serve as an appropriate part of the program of studies required for an elementary, secondary, or junior college teaching credential in California.

The teaching major should include Spanish 103, Spanish Pronunciation (2) and Spanish 116, Advanced Grammar and Composition (3). Spanish 125A–125B, Hispanic Institutions and Culture (3–3) is also recommended.

The student should confer with designated counselors in the Department of Spanish and Portuguese and in the School of Education concerning a teaching minor and other information regarding curricula for the credentials.

PORTUGUESE

Lower Division Courses

In courses 1, 2, 3, and 4, sections meet five hours weekly, including one hour of lab.

1. Elementary Portuguese. (4) I. The Staff

2. Elementary Portuguese (continuation of 1). (4) II. The Staff

3. Intermediate Portuguese. (4) I. The Staff

4. Intermediate Portuguese (continuation of 3). (4) II. The Staff

SPANISH

Lower Division Courses

In courses 1, 2, 3, and 4, sections meet five hours weekly, including one hour of lab.

1. Elementary Spanish. Beginner's Course. (4) I, II. The Staff

2. Elementary Spanish (continuation of 1). (4) I, II. The Staff

3. Intermediate Spanish. (4) I, II. The Staff

4. Intermediate Spanish (continuation of 3). (4) I, II. The Staff

8A. Spanish Conversation. (1) I. Mr. Ramón
Two one-hour meetings. Prerequisite: Spanish 2.

8B. Spanish Conversation (continuation of 8A). (1) II. Mr. Ramón

25A–25B. Advanced Spanish. (3–3) Yr. The Staff
Prerequisite: Spanish 4 or Spanish 3 with grade A.

30A–30B. Introduction to Hispanic Literature. (2–2) I, II. The Staff

Upper Division Courses

Spanish 25B is prerequisite for all upper division courses.

101A–101B. Conversation and Composition.* (3–3) Yr. The Staff

103. Spanish Pronunciation. (2) I, II. Mr. Avila, Mr. Campbell
Prerequisite: upper division standing and consent of instructor.
The course is concerned with the following: organs of respiration and articulation; vowels and consonants; intonation; and pronunciation.

105A–105B. Eighteenth- and Nineteenth-Century Literature. (3–3) Yr. Mr. McGrady

107A–107B. Spanish-American Literature. (3–3) Yr. Mr. Avila, Mr. Bary

109A–109B. Spanish Literature from the Beginnings to 1700 (End of the Golden Age). (3–3) Yr. Mr. Martinez-Lopez
To be taken in junior year.

110A–110B. Contemporary Spanish Literature. (3–3) Yr. Mr. Campbell

111A–111B. The Golden Age of Spain. (3–3) Yr. Mr. Reynolds
Prerequisite: Spanish 109A–109B.
Spanish literature, 1550–1680.

116. Advanced Grammar and Composition. (3) I, II. The Staff

118A–B–C–D–E. Individual Hispanic Authors. (2–2–2–2–2) I, II. The Staff
Intensive reading and discussion of the works of authors such as Cervantes, Lope de Vega, Quevedo, Calderon, Perez Galdos, Ruben Dario, Unamuno, Ortega y Gasset, Garcia Lorca, and Pablo Neruda. Authors to be chosen according to the interests of students and faculty.

125A–125B. Hispanic Institutions and Culture. (3–3) Yr. Mr. Martinez-Lopez

127A. Cervantes: *Don Quijote.* ** (3) I. The Staff
Prerequisite: upper division standing.
This course is devoted to the study of only the one work of Cervantes—*Don Quijote.*

* During 1964–65, to be taken only by those who have completed Spanish 25B or 101A. To be discontinued in 1965–66.

** Course cannot be taken for credit by students who have completed 118A–118B during 1963–64.

127B. Cervantes: Life and Works Other than *Don Quijote*.* (3) II. The Staff
Prerequisite: upper division standing.
This course is devoted to the study of the life and works of Cervantes, omitting *Don Quijote*.

199. Independent Studies in Spanish. (1–4) I, II. The Staff
Individual investigations in literary fields.

Graduate Courses

201A–201B. Historical Grammar and Old Spanish Readings. (2–2) Yr. The Staff

206A–206B. Poetry of the Golden Age of Spain. (2–2) Yr. The Staff
206A. Lyrical poetry of the Renaissance.
206B. Lyrical poetry of the Baroque Period.

207A–207B. Prose of the Golden Age of Spain. (2–2) Yr. The Staff
207A. *Santa Teresa, Guzman de Alfarache, Lazarillo de Tormes, Buscón.*
207B. *Don Quijote.*

208A–208B. Comedia of the Golden Age. (2–2) Yr. The Staff
A course dealing with the contributions of Lope de Vega and the outstanding playwrights among his successors.

210A–210B. Nineteenth- and Twentieth-Century Peninsular Literature. (2–2) Yr. The Staff
Seminars covering selected authors, themes or genres from the period in question.

214A–214B. Spanish-American Poetry. (2–2) Yr. The Staff
Seminar in selected authors and aspects of nineteenth- and twentieth-century Spanish-American poetry, Modernist and Vanguard Schools.

222A–222B. Spanish Literature through the Fifteenth Century. (2–2) Yr. The Staff
Study of Spanish prose and poetry from the beginings to the Golden Age.

224A–224B. Literature of Individual Spanish-American Countries. (2–2) Yr. Mr. Avila
An intensive study of literature of a particular Spanish-American country each year.

298. Special Studies. (1–4) I, II. The Staff

SPANISH LITERATURE IN ENGLISH TRANSLATION

(Courses for which no knowledge of Spanish is required.)

Spanish 115A. Masterpieces of Spanish Literature. (3) I. Mr. Bary, Mr. Tull
Readings in English translation and discussion of representative works from the Middle Ages to the end of the sixteenth century.

Spanish 115B. Masterpieces of Spanish Literature. (3) II. Mr. Bary, Mr. Tull
Readings in English translation and discussion of representative works from the seventeenth century to the end of the nineteenth.

Related Courses in Other Departments

Education SN 190. Procedures in Teaching Spanish in Secondary Schools. (2) I, II. Mr. Campbell, Mr. Wilson

Education SN 192A–B–C. Student Teaching: Spanish. (2–2–2) I, II. Mr. Campbell, Mr. Wilson

Philosophy 133. Philosophy of Language. (3) I or II. Mr. Hagen

Philosophy 146. Philosophy of Literature. (3) I or II. Mr. Fingarette, Mr. Sesonske

* Course cannot be taken for credit by students who have completed 118A–118B during 1963–64.

SPEECH AND DRAMATIC ART

Theodore W. Hatlen, Ph.D., *Professor of Dramatic Art (Chairman of the Department of Dramatic Art).*
John C. Snidecor, Ph.D., *Professor of Speech.*
Stanley L. Glenn, Ph.D., *Associate Professor of Dramatic Art.*
Upton S. Palmer, Ph.D., *Associate Professor of Speech.*
Rollin W. Quimby, Ph.D., *Associate Professor of Speech (Chairman of the Department of Speech).*
Edwin R. Schoell, Ph.D., *Associate Professor of Speech and Dramatic Art.*
Thomas B. Markus, Ph.D., *Assistant Professor of Dramatic Art.*

<>

*Rod Alexander, M.A., *Visiting Professor of Drama.*
S. John Macksoud, M.A., *Acting Assistant Professor of Speech.*
Paul M. Newman, M.A., *Acting Assistant Professor of Speech.*
Jack A. Byers, M.A., *Associate in Dramatic Art.*
**Douglas R. Seale, *Lecturer in Dramatic Art.*
Jesse L. Coburn, M.A., *Associate in Speech.*
Nicholas J. G. Scott, M.A., *Associate in Dramatic Art.*
Mary Lou Smitheram, M.A., *Associate in Speech.*

Majors in the Departments of Speech and Dramatic Art are based on a varied program of course offerings. The major in rhetoric and public address gives greater emphasis to general education outside the field of speech than does the speech major which emphasizes somewhat greater specialization through the selection of electives. Both majors prepare for the teaching credentials. The drama major provides a well-balanced program which may serve as an area of concentration for liberal arts education or as background for later professional work in the theater.

All majors offered lead to graduate work.

Preparation for the Major

Students should have passed Subject A (either examination or course) before taking Speech 20. By special arrangement, students may take Subject A and Speech 20 concurrently. Students who elect a major in the department after the freshman year may, with the approval of the chairman, substitute Speech 11 for Speech 20. English 1A and 1B may be taken concurrently with lower division work in speech or drama.

Requirements for Major

Students must present, by the first half of the junior year, a program to be approved by the department chairman. This program may be amended from time to time but only after consultation with the chairman. In addition to normal academic requirements, speech majors are required to participate for at least two semesters at the University of California, Santa Barbara, in each of two areas of performance. Majors in rhetoric and public address are expected to participate in performance activities in the areas of debate and public speaking.

Major students must maintain an average grade of C or higher in upper division speech and drama courses. Students in Speech 198 must pass written and oral examinations based upon a review of their work in speech and drama. During the same year they must publicly demonstrate skill in speech and reading performance.

General Speech Major

Students must meet the General Education requirements as outlined in the catalogue. Below are listed specific elective courses in the General Education sequence which are required for the General Speech Major.

Lower Division.—Biology 20 and Economics 1A or 109 or Psychology 1. History 4A–4B, Philosophy 1, Speech 20, 30, 32A, 34, 42, 45, 47, and 49A.

Upper Division—English 117A or 117E. History 177. Political Science 113, or 166, or 167. Speech 131, 135A, 150, 157, 159A, 160A or 160B or 160C, 180 and 198A–B. General electives selected with the approval of department chairman.

* Fall 1964 only.
** Spring 1965 only.

Speech and Hearing Major

Students must meet the General Education requirements as outlined in this catalogue. Below are listed specific elective courses in the General Education sequence which are required for the Speech and Hearing Major. In addition to the Speech and Hearing Major or sequence, students desiring to be credentialed must complete a major of at least 24 units in upper division and/or graduate work in a general subject acceptable to the State Department of Education.

Lower Division—History 17A, Psychology 1 or 101, Political Science 20, Anthropology (except physical) or Social Science elective (3 units), Biology 20, Speech 11 or 20 or 101, Speech 45, and Speech elective or Psychology 5 (2–3 units).

Upper Division—Speech 150, 172, 173, 174, 175, 177A–B–C, Psychology 178, Psychology controlled elective (3 units) and Psychology (UD) or Speech 199 (3 units).

Speech Correction Credential requires graduate year. See Speech adviser.

Rhetoric and Public Address Major

Students must meet the General Education requirement as outlined in this catalogue. Below are listed specific elective courses in the General Education sequence which are required for the Rhetoric and Public Address Major.

Lower Division—Economics 1A or 109, History 4A–4B, Philosophy 1 and 3, Speech 20, 34, 42, 45, and 47 or 48.

Upper Division—English 117A or 117E, History 177, Political Science 113, or 166 or 167, Sociology 124, Speech 131, 132A or 132B, 150, 157, 180 and 198A–B.

Drama Major

Students must meet the General Education requirement as outlined in this catalogue. Below are listed specific elective courses in the General Education sequence which are required for the Drama Major. Drama majors are also required: (1) to develop performance ability; (2) to participate in student productions; and (3) to engage in at least one Department of Dramatic Art activity each semester. Transfer students are required to complete at least three semesters in the Department of Dramatic Art.

Lower Division—Art 1, History 4A–4B, Music 15, Philosophy 1, Physical Education 1–15A, 1–18A, and 48, Psychology 1 or 11 or 101, Speech 11 or 20 or 101, Speech 30, 32A–32B, 42, 45, and 49A.

Upper Division—Art 112A or 112B, English 117A or 117E or 161, or 169 or 183, Sociology 170, Speech 135A, 152 or 154, 159A, 160A–B–C, 161, and 198A–198B.

The Minor

Twenty units are required: Speech 11 or 20 or 101, and 17 units from the following: Speech 34, 42, 47, 48, 131, 132A–132B, 142, 180. Education SP 190 must be taken in addition to the above.

REQUIREMENTS FOR THE DEGREE OF MASTER OF ARTS

Although normally the student will have an undergraduate major in speech and drama, qualified students from related areas will be admitted with the understanding that all graduate students must have or acquire a background comparable in breadth to that of the A.B. candidates in speech and drama on this campus. No graduate student may take a graduate course in speech who has to his credit fewer than three courses in upper division speech. This requirement is prerequisite to the 24 units demanded for the master's degree.

At least two semesters of graduate study must be completed at Santa Barbara and at least 24 units of course work as a graduate student. At least 12 of the units must be taken in 200 series courses in speech and drama. The remaining units may be chosen from nonperformance undergraduate courses numbered 100 or above. With the approval of the department, a maximum of 9 of these remaining units may be selected from graduate or upper division

courses in other departments. For example, students in speech pathology and phonetics will be required to give considerable emphasis to courses in psychology. In addition to the minimum courses for completion of the master's degree, the chairman of the department may prescribe such additional courses as he believes are necessary to satisfy the educational needs of the student.

The diagnostic tests covering theory and principles of the major area of interest will be taken during the first semester of residence. Students not having satisfactory scores will be required to enroll in undergraduate courses in areas of weakness. These tests will be equivalent to our present oral and written comprehensive examinations in Speech 198. Examinations taken in connection with Speech 198 may be substituted for other diagnostic tests.

Students must pass an oral skills examination during the first semester of residence.

The student must demonstrate a knowledge of French or German equivalent to the third course.

The candidate in speech pathology and phonetics will be required to demonstrate adequacy in the field of statistics. In certain cases, this may substitute for the foreign language requirement.

The student will submit a thesis which demonstrates the ability of the candidate to do independent thinking on a scholarly subject.

The student must satisfactorily complete an oral examination in defense of thesis. This examination will be given the candidate after the first full draft of the thesis is completed.

Credential Programs

Either a major or a minor in Speech or Drama may serve as an appropriate part of the program of studies required for an elementary, secondary, or junior college teaching credential in California. A student wishing to secure any of these credentials should confer with designated counselors in the Departments of Speech and Dramatic Art and in the School of Education.

California Certification in Remedial Speech and Hearing

The Department offers the course sequence required by the State Department of Education for the preparation of speech and hearing clinicians in the public schools. This sequence may be related to a major or minor in the department, and may be associated with a variety of teaching majors in other departments to fulfill the basic requisite of a completed 24-unit major in a general subject matter area.

Academic and experiential requirements for the Certificate of Clinical Competence of the American Speech and Hearing Association also may be met by the student who completes both the specified undergraduate preparation and the master's degree program.

The sequence outlined below is generally applicable to students preparing for the California credential, though limited substitutions may be made upon the advice of the counselor in the major. Some additional course work requirements and from 40 to 100 additional clock hours of practicum experience are needed for national accreditation.

Credential Sequence

Area 1: Introduction to Exceptional Children (3 units). Psychology 178.

Area 2: Principles of Counseling Exceptional Children and Their Parents (3 units). Education course in process of development.

Area 3: Language and Speech Development and Disorders (3 units). Speech 172.

Area 4: Basic Studies in Normal and Disordered Speech Courses (15 units). Speech 150, 173, and 3 additional courses to be chosen from the following: Speech 117, Psychology 112, 160, 162, 163A and 168.

Area 5: Specialized Courses in Speech Disorders (8 units). Speech 177A, 177B, 177C and 177D.

Area 6: Specialized Courses in Hearing Disorders (6 units). Speech 174 and 175, Audiology and Audiometry.

Clinical Practice and Student Teaching. (1) One hundred thirty-five clock hours of clinical

practice and observation. The Speech 177 sequence listed above *and* Speech 191, 4 units. (2) Ninety clock hours of student teaching. Education Sp 192B, 4 units.

In addition to the above courses, the student who desires a California State teaching credential will complete a general major, usually in Speech or Psychology. He will also complete work required in the Department of Education for the standard teaching credential with an emphasis in secondary teaching, including courses in:

1. Educational Psychology, 3 units.
2. History and Philosophy of Education, 3 units.
3. Curriculum and Instructional Procedures (Speech will substitute portions of Speech 177A–B–C–D and Speech 174 and 175), 2 units.

The student who elects to complete a general major in a subject other than Psychology will be required to complete a teaching methods course in the major subject when such a course is available. For example, the student majoring in Speech would complete Education Sp 190, Speech Activities and Methods for Teachers (2).

Psychology Major for Speech and Hearing Credential Candidates

For state certification in Speech and Hearing there is available a major in Psychology consisting of required lower division work and 24 units of upper division work which can be completed in the baccalaureate program or may be completed within the fifth year teacher training program, provided the Speech major, Speech and Hearing Emphasis, is completed for the A.B. degree. Students should confer with advisers in the Department of Speech or the Department of Psychology and also in the School of Education.

SPEECH AND DRAMA

Lower Division Courses

11. Fundamentals of Speech. (3) I, II. The Staff

Participation in public speaking, oral reading, and discussion.

20. Introduction to Speech. (3) I. Mr. Palmer

For majors only.
Orientation to the field of speech.

25. Spoken and Written English for the Foreign Student. (4) I. Mr. Nichols

Training in written and spoken English for foreign students using English as a secondary language.

26. Advanced Spoken and Written English for the Foreign Student. (4) II. Mr. Nichols

Training in written and spoken English for foreign students using English as a secondary language.

30. Fundamentals of Acting. (3) I, II. Mr. Markus

Provides the beginning actor with the basic approaches to the art of acting. Practical application of these approaches through improvisations, scenes from plays, pantomimes, and voice and body exercises.

32A. Theater Arts Crafts. (2) I. Mr. Scott

The physical theater and design, construction, painting, and lighting of stage settings. Practical experience afforded in set construction and backstage duties in connection with university dramatic productions.

32B. Theater Arts Crafts. (2) II. Mr. Byers

The design and function of costume and make-up in theatrical production.

34. Introduction to Rhetoric and Public Address. (3) I. Mr. Coburn

Prerequisite: completion of Subject A requirement.
Introduction to the great rhetorical works of western civilization and to the process of rhetorical analysis.

40. Radio and Television Broadcasting. (3) II. Mr. Quimby

Nature of the medium, its history, legal methods of control, significance in modern society, standards applicable to various program types.

42. Oral Reading. (3) I, II. Mr. Macksoud

Technique of reading various types of literature.

45. The Understanding of Drama. (3) I, II. Mr. Hatlen

The general nature of dramatic presentation, including elements of dramatic structure, types of drama, and the contributions of the actor, director, designer, technician, and audience.

47. Debate. (3) I. Mr. Newman

Intensive drill in debate techniques. Class members will participate in intercollegiate forensic activities.

48. Argumentation, Discussion, and Debate. (3) II. Mr. Newman

Forms of argument, analysis, and evidence. Discussion projects.

49A–49B. Theater Workshop. (1–1) I, II. Mr. Glenn

Projects in acting, stagecraft, and directing. A student may enroll for 1 or 2 units. No student will be permitted to take more than 4 units for credit altogether in the 49, 159 sequences.

Upper Division Courses

***101. Introduction to Public Speaking.** (3) I, II. Mr. Schoell

Not open to students who have had Speech 11 or its equivalent.

Application of the principles of effective speech composition and delivery to public address.

131. Advanced Public Speaking. (3) I or II. Mr. Quimby

Prerequisite: Speech 11 or 31.

Speech composition, audience analysis, and persuasion.

132A. American Public Address. (3) I (alternate years). Mr. Palmer

Study of leading ideas expressed by American statesmen up to the Civil War.

132B. American Public Address. (3) II. (alternate years). Mr. Palmer

Study of leading ideas expressed by American statesmen since the Civil War.

135A. Theory of Directing. (3) I. Mr. Glenn, Mr. Hatlen

Analysis of dramatic materials and techniques of directorial restatement through preparation of a prompt book.

135B. Problems in Directing. (3) II. Mr. Glenn, Mr. Hatlen

Prerequisite: Speech 135A.

Direction of performances of scenes and one-act plays.

142. Advanced Oral Reading. (3) II. Mr. Macksoud

Prerequisite: Speech 42.

Individual projects.

150. Phonetics. (3) I. ———

The application of the International Phonetic Alphabet, with especial reference to American speech sounds. Ability to analyze and describe normal and deviate acoustic patterns.

***151. Advanced Acting.** (3) I or II. Mr. Glenn

Prerequisite: Speech 30.

152. Playwriting. (3) II. Mr. Schoell

Dramatic technique and structure; composition of original plays.

154. Dramatic Theory and Criticism. (3) II. Mr. Glenn

***157. Intercollegiate Debate.** (2) I, II. Mr. Newman

May be repeated for a maximum of 6 units. A total of no more than 8 units of credit may be received in any combination of Speech 47, 48, and 157.

Participation in intercollegiate debate.

158. Argumentation and Public Discussion. (3) II. Mr. Palmer

Emphasis on the place of logic in argumentation; preparation for public discussion performance.

***159A–B–C–D. Theater Workshop.** (1–1–1–1) I, II. Mr. Hatlen

Projects in acting, stagecraft, and directing. A student may enroll for 1 or 2 units, and may repeat the course for a total of 4 units in combined Speech 49, 159 sequence.

160A. Development of Dramatic Art. (3) I. Mr. Glenn

The physical stage, technical structure of drama, types and forms of drama from the origin in Greece to the Renaissance.

160B. Development of Dramatic Art. (3) II. Mr. Markus

The history of drama and theater from the Renaissance to Ibsen.

160C. Development of Dramatic Art. (3) I. Mr. Markus

A study of Ibsen and subsequent dramatists: English, Continental, and American.

161. History of Stage Costume. (3) I. Mr. Byers

Costume and make-up. The development of costume through the ages, relating costume to changing patterns of culture and to characters in period plays.

162. The Art of the Film. (2) II. Mr. Schoell

Cultural, historical, and esthetic aspects of the film, combining lectures, papers, and showing of significant films.

172. Speech and Hearing Problems. (3) I. Mr. Snidecor

Theoretical backgrounds for the education of the speech and hearing handicapped child. Credential candidates normally enroll in Speech 150 concurrently with Speech 172.

173. Advanced Speech and Hearing Problems. (3) II. Mr. Snidecor

Prerequisite: Speech 150 and 172.

Study of the etiology and educational treatment of stuttering and the more severe speech deviations resulting from cleft palate, vocal anomolies, aphasia, and cerebral palsy.

174. Speech Reading. (3) II (odd years). ———

Prerequisite: Speech 150.

Theory and practice of the historical methods of teaching speech reading. Lessons for the various grade levels. Coordination with auditory training. Laboratory required.

175. Audiology and Audiometry. (3) II (even years). ———

Prerequisite: Speech 150.

The nature of hearing and hearing loss; the measurement and interpretation of reduced hearing acuity. Programs in hearing conservation, including auditory training and hearing aids. Laboratory required.

177A. Specialized Studies in Speech Disorders. (2) II. ———

Prerequisite: Speech 150 and 172.

Examination of the theoretical bases for remedial procedures.

* Not acceptable for the Master's degree.

177B. Specialized Studies in Speech Disorders. (2) II. ———
Prerequisite: Speech 150 and 172.
Evaluation of diagnostic procedures.

***177C. Specialized Studies in Speech Disorders.** (2) I, II. ———
Prerequisite: Speech 150, 172, 177A or 177B.
Diagnosis and remedial methods in a variety of clinical settings. Laboratory required.

***177D. Specialized Studies in Speech Disorders.** (2) I. Mr. Schoell
Prerequisite: Speech 150, 172, 177A or 177B.
Remedial methods for the speech and hearing handicapped in the public schools. Laboratory required. Required of State credential candidates.

180. Modern Rhetoric. (3) II. Mr. Quimby
Application to contemporary rhetorical theories of recent theoretical and experimental advances in the study of verbal communication.

191. Clinical Practice: Speech and Hearing. (1–6) I, II. The Staff
May be repeated for a total of 6 units.

198A–B–C–D. Comprehensive Final Examination. (1–1–1–1) I, II. The Staff
Integrates the various fields of speech through directed reading and review.
Terminates in comprehensive oral and written examinations. Demonstration of performance in speaking and reading.

199. Independent Studies in Speech. (1–4) I, II. The Staff

Graduate Courses

200. Introduction to Graduate Study in Speech. (2) I. The Staff
Open, with the permission of the department chairman, to qualified students who have completed the Bachelor of Arts degree.
Designed to acquaint the student with the procedures and disciplines essential for pursuing graduate work in the various areas of speech.

210. Special Topics. (3) I, II. The Staff
Selected topics in advanced speech and drama. The content will vary. Course may be repeated with a different topic. 6 units maximum.

235. Problems in Play Production. (3) I, II. Mr. Glenn, Mr. Hatlen
Prerequisite: undergraduate courses in play direction and stagecraft.
Discussion of advanced problems in production and stagecraft. Laboratory periods spent in practical application of these problems. Projects in production.

240. Advanced Phonetics. (3) I or II. Mr. Snidecor
The scientific study of vocal symbols as these are spoken and heard, with especial reference to physiological and psycho-acoustical considerations.

245A. Advanced Speech and Hearing Problems. (3) I or II. ———
Prerequisite: consent of the instructor.
Experimental methods in studying speech and hearing.

* Not acceptable for Master's degree.

245B. Advanced Speech and Hearing Problems. (3) II. Mr. Snidecor
Prerequisite: consent of the instructor. 245A is not prerequisite to 245B.
The application of experimental methods in past and current research.

260. Greek and Roman Rhetoric. (3) I (alternate years). Mr. Quimby
Prerequisite: Speech 130 or consent of instructor.
Examination of the theory, teaching, and practice of rhetoric in classical civilization using selections from historians, philosophical treatises on rhetoric, textbooks, and extant speeches as materials.

261. Medieval and Renaissance Rhetoric. (3) II (alternate years). Mr. Quimby
Prerequisite: Speech 260, or consent of instructor.
Examination of the theory and teaching of rhetoric in the middle ages and Renaissance.

272. Studies in Dramatic Literature and Theater History. (3) I, II. Mr. Hatlen
Prerequisite: undergraduate courses in the development of dramatic art.
Seminar covering specific periods in the development of dramatic art. Includes study of the playwright and of theatrical conventions as they are related to the times. May be repeated for a total of 6 units.

294. Group Studies. (2–4) I, II. The Staff
Prerequiste: graduate standing.
A critical review of research in selected fields of speech and drama. A. Rhetoric and Public Address; B. Drama; C. Speech Pathology and Audiology. May be repeated for a maximum of 6 units.

299. Special Studies Research. (2–4) I, II. The Staff

Related Courses in Another Department

Education SP 190. Speech Activities and Methods for Teachers. (2) I or II. Mr. Schoell

Education SP 192A. Student Teaching: Speech. (2–4) I, II. Mr. Schoell

Education SP 192B. Student Teaching: Speech and Hearing. (2–4) I, II. Mr. Schoell
Prerequisite: Speech 177D.
Students must complete a total of 90 clock hours of actual teaching exclusive of observation.

Education Abroad Courses

Padua Center

See section on Education Abroad Program for detailed course descriptions.

PC 163A–163B. Devlopment of the European Theater. (2–2)

SUBJECT A

Archibald G. Delmarsh, Ph.D., *Supervisor of Instruction in Subject A.*

Regulations. For regulations governing the Subject A requirement, see pages 18 and 40. Fee, $35.

Subject A: English Composition. (No credit) I, II. The Staff

Three hours weekly for one semester. Training in writing correctly; study of grammar, punctuation, diction, spelling, and structure of sentences, paragraphs, and essays. Weekly compositions and other written exercises.

Satisfaction of the Subject A requirement is prerequisite to enrollment in English 1A.

TUTORIAL PROGRAM

Committee in Charge
*Garrett J. Hardin, Ph.D., *Professor of Biology.*
**Lawrence Willson, Ph.D., *Professor of English.*
Keith Aldrich, Ph.D., *Associate Professor of Classics.*
Gordon E. Baker, Ph.D., *Associate Professor of Political Science* (*Chairman of Committee*).
Paul D. Wienpahl, Ph.D., *Associate Professor of Philosophy.*
Donald R. Lent, M.F.A., *Assistant Professor of Art.*

The purpose of the Tutorial Program is to give superior students a broadly liberal education through an interdepartmental major which allows considerable freedom in the selection of courses. This major also emphasizes rigorous training in the arts of critical reading, discussion, and writing. An average grade of B or better in the freshman year is ordinarily a prerequisite to candidacy, although the Tutorial Committee will admit a student with a grade average lower than B who can be shown by other evidence than grades to be the type of student who would profit by the program. Properly qualified students who have spent their freshman year elsewhere may also be admitted. Freshmen students who wish to become acquainted with the Tutorial Program may elect either semester, or both semesters of Tutorial 1A–1B, without committing themselves to becoming majors or minors.

A student may register formally as a major or a minor after consultation with the chairman and approval by him. The student will then be assigned a permanent adviser. The student may not proceed into the upper division Tutorials, however, until he has completed two Colloquia (see below). At least one colloquium will be offered in every regular semester.

The distinctive feature of the program is individual instruction in courses not offered in the regular curriculum but designed for the student with the assistance of his adviser and the Tutorial Committee. The colloquia are open to all students as electives. Upon approval of the Dean of the College of Letters and Science, they may be elected as alternates to certain courses listed as requirements in the Program of General Education.

Preparation for the Major

Students follow the General Education Program with the following provisos:

1. The student is strongly advised to elect History 4A–4B.

2. *Colloquia:* In the sophomore year the student must elect two colloquia, one each semester. It is unlikely that he will be permitted to continue in the Tutorial Program if his grade in either colloquium falls below B. (A colloquium is a formal discussion group conducted by two instructors from different departments of knowledge.)

The Major

Each student is assigned to a faculty adviser for guidance in the preparation of his program. As far as possible, he retains the same adviser during his four years of undergraduate study. When he has completed his colloquia, the student begins his program of specifically tutorial instruction. With the assistance of his adviser, and after consultation with the Tutorial Committee, he elects two tutorial courses during each semester of his junior and senior years.

Since the tutorial experience involves more than a single subject matter, students majoring in the program are advised by the Committee to elect a substantial amount of work (in many cases virtually the equivalent of a second major) in a regular subject field.

The Minor

The Tutorial Program may be elected as a minor. The minor student takes two required colloquia, followed by 12, instead of 24, units of tutorial courses.

* Absent on leave, fall 1964.
** Sabbatical leave in residence, spring 1965.

TUTORIAL

Lower Division Course

1A–1B. Introduction to Tutorial.
(1–1) I, II. The Staff
Prerequisite: approval of Tutorial Committee.
Readings and essay-writing designed to acquaint new or prospective Tutorial majors with the nature and methods of the Tutorial Program.

COLLOQUIUM

Upper Division Courses

The Colloquia are open to all students, with approval of the instructors, as electives.

110. Myth. (3) II. Mr. Damon, Mr. Sesonske

111. Shakespeare: Literature in the Theater. (3) I. Mr. Glenn, Mr. Swander

112. Nietzsche and the Ambiguity of Romanticism. (3) II.
Mr. Hagen, Miss Mahlendorf

TUTORIAL

Upper Division Course

Tutorial 100. (3) I, II.
May be repeated for credit up to 24 units.
Tutors to be selected from the faculty according to the interests and requirements of the students.

The Regents of the University

REGENTS EX OFFICIO

His Excellency EDMUND G. BROWN, LL.B.
Governor of California and President of The Regents
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Lieutenant-Governor of California
State Capitol, Sacramento, Calif. 95814

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State Capitol, Sacramento, Calif. 95814

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2147 Administration Building, Los Angeles, Calif. 90024

APPOINTED REGENTS

The term of the appointed Regents is sixteen years, and terms expire March 1 of the years indicated in parentheses.

EDWIN W. PAULEY, B.S., LL.D. (1970)
Ten Thousand Santa Monica Blvd.,
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CORNELIUS J. HAGGERTY (1966)
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202 W. First St., Los Angeles, Calif. 90053

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LAURENCE J. KENNEDY, LL.B. (1968)
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Mrs. Elizabeth O. Hansen, A.B.
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689 University Hall, Berkeley, Calif. 94720

The University of California

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Vice-Chancellor—Business and Finance, William J. Wrigglesworth, B.Ed.
Vice-Chancellor—Student Affairs, Charles J. A. Halberg, Ph.D.

Chancellor at San Diego
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Vice-Chancellor John S. Galbraith, Ph.D.
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The Santa Barbara Campus

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Stephen S. Goodspeed, Ph.D.—*Student Affairs*
Luigi Dusmet, M.B.A.—*Business and Finance*

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University Librarian
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William H. Allaway, Ed.D.—*Education Abroad Program*

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Associate Dean of Students
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Robert N. Evans, B.S.—*Dean of Men*

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George Daigneault, Ph.D.—*University Extension*

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Keith M. Aldrich, Ph.D., *Associate Dean*
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David C. Epperson, Ph.D., *Assistant Dean*

School of Engineering
Albert G. Conrad, E.E., *Dean*

The Graduate Division
Earl L. Griggs, Ph.D., D. Lit., *Dean*
John W. Cotton, Ph.D., *Associate Dean*

Santa Barbara*

OFFICERS OF INSTRUCTION

Staff for 1963–1964

Adams, Henry M., Ph.D., Professor of History. A.B., Lehigh University, 1930; M.A., University of Southern California, 1934; Ph.D., Stanford University, 1937.

Adams, Larry L., M.A., Acting Instructor in Political Science. A.B., University of California (Santa Barbara), 1958; M.A., 1960.

Adams, Samuel, M.A., Assistant Supervisor of Physical Education. A.B., University of California (Berkeley), 1954; M.A., University of California (Santa Barbara), 1961.

Addison, Michael C., M.F.A., Lecturer in Speech and Drama. A.B., Pomona College, 1958; M.F.A., Tulane University, 1960.

Aggeler, William F., Ph.D., Professor of French. B.S., California Institute of Technology, 1925; M.A., University of California (Berkeley), 1932; Ph.D., 1939.

Albaric, Jacques, Certificat d'études supérieures, Lecturer in French. Certificat d'études supérieures, Montpellier, 1948.

Aldrich, Keith M., Ph.D., Associate Professor of Classics. A.B. (English), University of Washington, 1950; A.B. (Classics), 1954; M.A. (Classics), Harvard, 1955; Ph.D., University of California (Berkeley), 1957.

Alexander, Alec P., Ph.D., Assistant Professor of Economics. A.B., University of California (Berkeley), 1949; Ph.D., 1957.

Altus, William D., Ph.D., Professor of Psychology. A.B., B.S., Kansas State Teachers College (Emporia), 1930; M.A., 1932; Ph.D., New York University, 1941.

Alves, Marion P., M.A., Lecturer in Home Economics. B.S., University of Minnesota, 1936; M.A., 1941.

Anderson, Curtis B., Ph.D., Lecturer in Chemistry. B.S., University of Minnesota, 1956; Ph.D., University of California (Los Angeles), 1963.

Anderson, Marian H., M.S., Associate Professor of Physical Education. A.B., Pomona College, 1929; M.S., University of Southern California, 1952.

Anderson, Robert N., Major, Military Police Corps, U.S. Army, Associate Professor of Military Science. A.B., Michigan State College, 1950.

Anderson, Stanley V., Ph.D., Assistant Professor of Political Science. A.B., University of California (Berkeley), 1949; LL.B., 1953; Ph.D., 1961.

Andron, Mortimer, Ph.D., Associate Professor of Economics. A.B., University of California (Los Angeles), 1936; M.A., University of Oregon, 1939; Ph.D., University of Illinois, 1942.

Avila, Pablo, Ph.D., Associate Professor of Spanish. A.B., Stanford University, 1931; M.A., 1932; Ph.D., 1937.

Baer, Kurt, Ph.D., Professor of Art. A.B., University of California (Berkeley), 1925; M.A., 1926; Ph.D., University of Southern California, 1936.

Bagish, Henry H., M.A., Lecturer in Sociology. A.B., University of California (Santa Barbara), 1948; M.A., University of California (Los Angeles), 1949.

Baker, Gordon E., Ph.D., Associate Professor of Political Science. A.B., Reed College, 1948; M.A., University of Washington, 1949; Ph.D., Princeton University, 1952.

Baldwin, Leland D., Ph.D., Lecturer in History. A.B., Greenville College, 1921; Ph.D., University of Michigan, 1932.

Barkey, Ralph R., M.A., Assistant Supervisor of Physical Education. A.B., University of California (Santa Barbara), 1958; M.A., 1963.

Barnett, Helen M., M.A., Associate Professor of Music, Emeritus. A.B., University of California (Berkeley), 1928; M.A., University of Southern California, 1932.

Barrett, Paul H., Ph.D., Associate Professor of Physics. B.S., Montana State College, 1944; Ph.D., University of California (Berkeley), 1951.

Bartlett, Elizabeth, B.S., Associate in English. B.S., New York City Teachers College, 1931.

Bartlett, Stanley U., B.S., Lecturer in Economics. B.S., University of California (Berkeley), 1947.

Barton, H. Arnold, Ph.D., Assistant Professor of History. B.A., Pomona College, 1953; Ph.D., Princeton University, 1962.

* The *Catalogue* contains the following list of the Officers of Instruction for 1963–1964, and listings, by departments, of known teaching staff for 1964–1965 with general information on courses of instruction pertaining to 1964–1965.

Bary, David A., Ph.D., Assistant Professor of Spanish. A.B., University of California (Berkeley), 1948; M.A., 1950; Ph.D., 1956.

Beachboard, Robert, Docteur de l'Universite de Paris, Associate Professor of French. A.B., Pennsylvania State University, 1932; Docteur de l'Universite de Paris, 1939.

Beamish, Jerome J., Ed.D., Acting Assistant Professor of Education. A.B., Sir George Williams University, 1957; M.A., Columbia University, 1958; Ed.D., 1962.

Bear, Herbert S. Jr., Ph.D., Associate Professor of Mathematics. A.B., University of California (Berkeley), 1950; Ph.D., 1957.

Becker, Gordon M., Ph.D., Lecturer in Psychology. B.S., University of Connecticut, 1948; M.A., Teachers College, Columbia University, 1949; Ph.D., University of Pittsburgh, 1955.

Berlak, Harold, Ed.D., Assistant Professor of Education. A.B., Boston University, 1954; M.A., Harvard, 1957; Ed.D., 1963.

Bertelli, Domenick J., Ph.D., Assistant Professor of Chemistry. B.S., University of Southern California, 1958; Ph.D., University of Washington, 1961.

Biblarz, Arturo, M.A., Lecturer in Sociology. A.B., University of California (Los Angeles), 1955; M.A., 1960.

Bickerdike, Ernest L., Ph.D., Professor of Chemistry. A.B., University of Southern California, 1930; M.A., 1932; Ph.D., 1937.

Biester, Charlotte E., Ed.D., Professor of Home Economics. A.B., University of Illinois, 1921; M.A., Columbia University, 1939; Ed.D., Colorado State College, 1950.

Billigmeier, Robert H., Ph.D., Assistant Professor of Sociology. A.B., Stanford University, 1938; M.A., University of California (Berkeley), 1939; Ph.D., Stanford University, 1951.

Bissell, Arthur D., M.D., Lecturer in Biology. B.S., Northwestern University Medical School, 1928; M.D., 1930.

Bockman, Kenneth R., Ph.D., Assistant Professor of Engineering Mechanics. B.M.E., University of Idaho, 1958; M.S., University of Illinois, 1961; Ph.D., 1962.

Boehme, Thomas K., Ph.D., Assistant Professor of Mathematics. B.S., University of Oklahoma, 1952; M.S., 1957; Ph.D., California Institute of Technology, 1960.

Bonadio, Felice A., M.A., Lecturer in History. A.B., Johns Hopkins University, 1958; M.A., Yale University, 1959.

Bonvalet, Roland C., A.B., Associate in French. A.B., University of British Columbia, 1959.

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VERNON I. CHEADLE
Chancellor